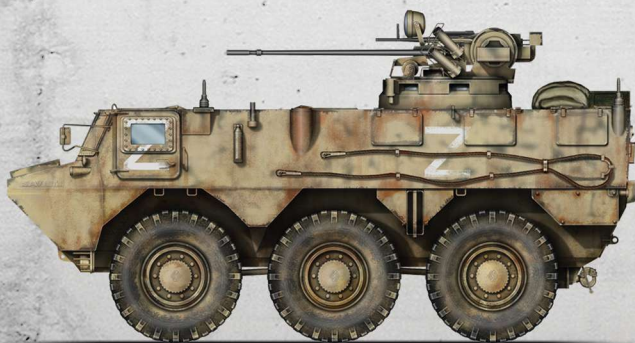
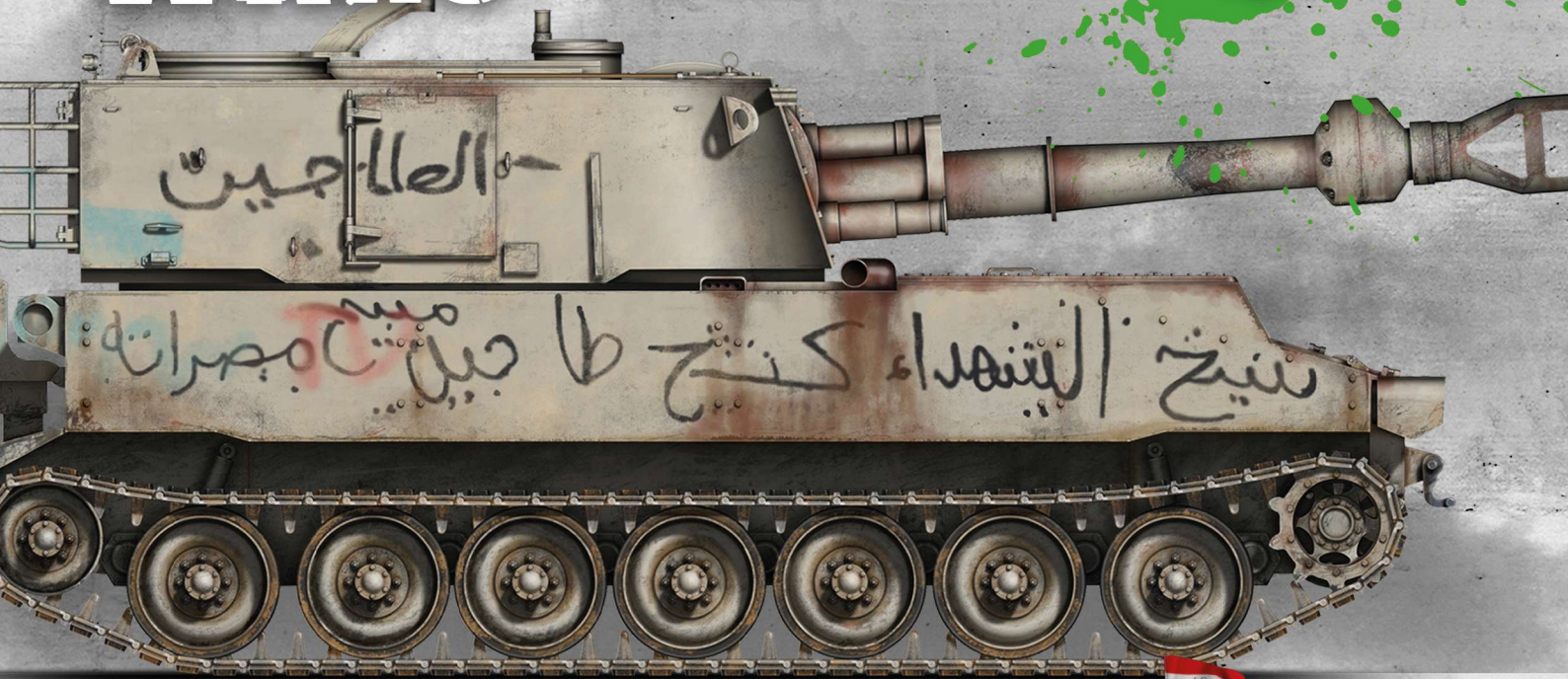


ARAB REVOLUTIONS AND BORDER WARS

1980
2018



Pere Valls



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MODERN CONFLICTS PROFILE GUIDE VOL. III

ARAB REVOLUTIONS AND BORDER WARS

1980
2018

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INTRODUCTION

THE ARAB SPRING AND BORDER WARS IN CONTEXT

It was on the 17th of December 2010 that impoverished street vendor Mohamed Bouazizi set himself on fire and burnt himself later dying from his injuries. He had had the vegetables he was selling from his unlicensed cart confiscated by Tunisian police and in a desperate protest set himself alight. This act led to a wide scale protests about the corruption and indifference of President Zine El Abidine Ben Ali. Mass Tunisian protests led to the overthrow of Ben Ali by the end of January, for the first time in human history, it was the use of mobile phones and social network sights that spread the idea of revolution and protest across the region and start what we call "The Arab Spring". Mass protests at a range of different issues broke out in Algeria, Jordan, Egypt, Syria and several other arab countries. Not all regimes were toppled, and many of the uprisings or successful revolutions don't bring the free or better conditions that peoples demand, instead they ended in creating a platform for extremists like that of ISIS in Syria and to an extent in Libya where anarchy was the result. In Egypt the removal of Mubarak was ultimately lead to a military coup by the military under Abdel Fattah el-Sisi. By the end of 2011 Yemen's government was overthrown allowing the Shia Houthis take control of Sanaa and a large chunk of the country, and leading to a bloody and disastrous war with neighboring Saudi Arabia. It is the great divide and wrestling of power and influence between Sunni Saudi Arabia and Shia Iran that is the back drop to many proxy conflicts in the region. The government in Algeria would survive the Arab Spring as they had already had a protracted civil war with Islamists between 1992 and 1998 in which thousands of people had been murdered which still loomed large in the memory of many. In Syria Assad fought peaceful protesters with the tanks and troops and then released Islamic militants from prisons that make western support for the rebels more difficult.



As ISIS and other Islamic militants joined the conflict Assad turned to Russia and Shia Iran and Hezbollah to save his Alawite based regime from the majority based Sunni militants, but not before millions of Syrians became refugees in Europe and neighboring Arab states.

This volume also examines the military equipment and recent history of states involved in boarder wars such as Morocco, Turkey and Sudan. Morocco's occupation of the former Spanish Sahara and conflict with the Polisario is quite now, but ran for decades with little coverage from the outside world. Sudan's civil war with the Christian South led to the split of the country into Northern and Southern states. While brutal campaigns of ethnic cleansing in Darfur got much attention in the west but little action. Turkey's long term obsession with containing Kurdish national aspirations have led this now questionable NATO ally to attack the US assisted YPG in Northern Syria. Under president Erdogan, Turkey has fallen out with Washington over a range of issues as her army seems to be digging in for a long stay in Northern Syria. The destruction of ISIS in Iraq has led to stability in that war weary country and a bedding down of democracy as witnessed in recent elections that may be an example to other nations in the region, perhaps the era of the strong man and dictator, while not entirely over, maybe receding, for it Mohamed Bouazizi sacrifice has any lasting legacy, it maybe was the beginning of the end of decades of corruption, sectarianism and misrule in the middle east, only time shall tell.





2. REGULAR ARAB ARMIES

2.1

MOROCCAN ARMY

The Moroccan armed forces has a long and illustrious history dating back to the 11th century. During the Spanish Civil war and World War thousands of Moroccans served with Franco and the Free French forces respectively. With the dissolution of the French Protectorate in 1956, Morocco created its own Royal armed forces, seeing minor skirmishing with neighboring Algeria and various UN peace duties and as part of various western interventions in Zaire, Somalia and the Balkans. It was the departure of Spanish forces from the Sahara in 1975 that would create the Moroccan armies longest and most challenging conflict. The death of Franco saw Spain finally withdraw from the Sahara, this was seen by the then Moroccan King Hassan as an ideal opportunity to take over this Phosphate rich territory, situation that he did by initiating The Green March with thousands of Moroccans marching into the former Spanish Sahara. At first the Moroccans involved Mauritania in the carve up of this territory but the indigenous Sahrawi people were determined to fight this occupation and thus The Polisario Front came into being with the assistance of neighboring Algeria. Using traditional "Ghazzi" or hit and run tactics Polisario units launched long range raids against Mauritania's military, rail networks and power plants leading to French military intervention, but eventually a Mauritanian withdrawal from Saharan territory leaving Morocco to fight on its own. Polisario units launched similar attacks on isolated Moroccan garrisons and armed patrols in a conflict that persisted for decades. The Moroccan forces were eventually to construct a gigantic defensive wall from the Algerian boarder to the Atlantic coast in an attempt to neutralize Polisario raiders, along which, were dug in tanks, APCs and sophisticated listening devices. The Royal Moroccan forces had the assistance of Saudi Arabian finances and were able to procure a broad range of equipment from France, America, Austria, South Africa and later Belarus. Since the UN sponsored ceasefire agreement of 1991 there has been a peace with both sides attempting to boost their claims but not a lot of interest shown by the rest of the world in the long standing Western Sahara conflict.



Moroccan M1A1 SA Abrams

A Moroccan M1A1 SA Abrams, one of 220 to be supplied to Morocco these differ from US variants in having had their frontal armour packages replaced with a special armour configuration including a situational awareness frontal turret package.



Moroccan M60 A1/A3

Moroccan forces have been a large user of the M60 series of tanks. The first were purchased between 1991 and 1994 and included 260 M60A3TTS, 167 A3's and 300 ex US M60A1's these tanks were upgraded to A3 standard during service with 140 upgraded to M60 A3 TTS in 2009 these MBTs represented a major advance not only over the older M48's but the Polisario T-55's and T-62 tanks in the western Sahara.





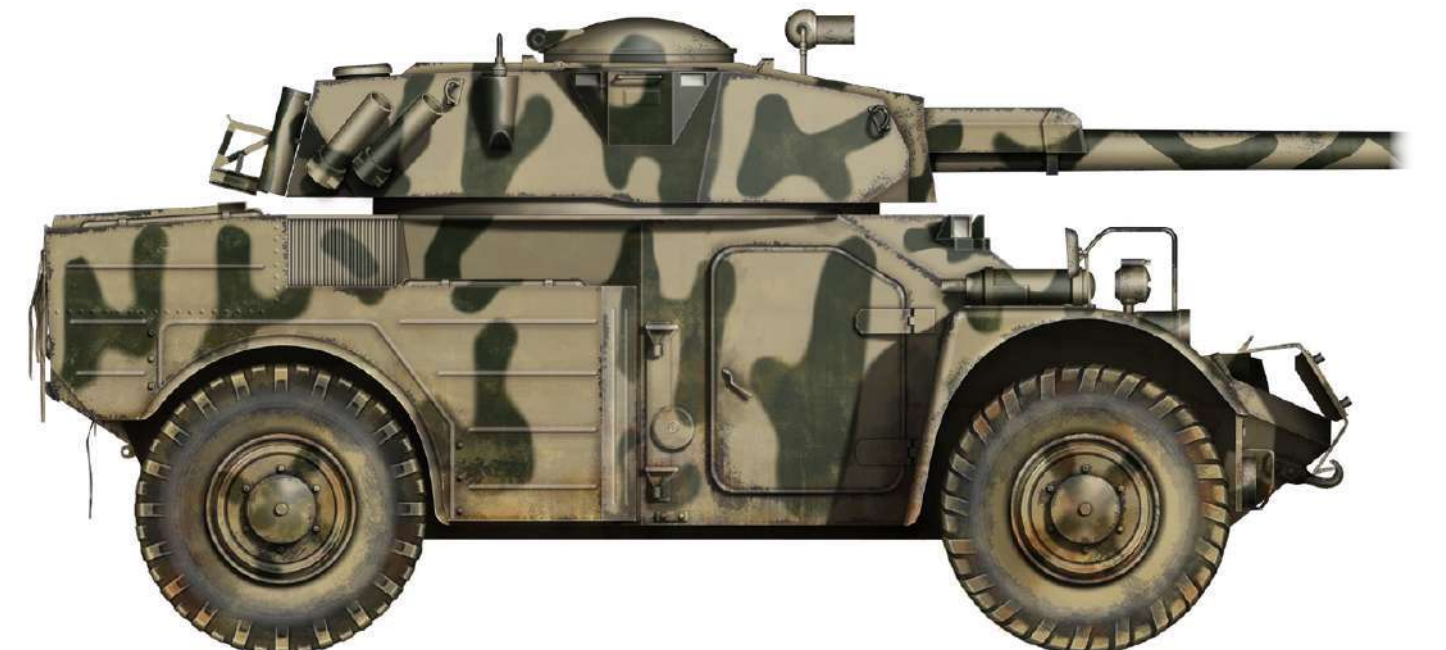
Moroccan T-72B/BK

Between 1999 and 2001 the Moroccan armed forces procured 136 T-72 B's and 12 T-72 BK command variants from Belarus. These vehicles were refurbished and updated in Belarusian tank plant 140 in Borisov with new fire control systems and thermal imaging sights. These T-72 variants feature the thicker front turret armour Nato code named "Super Dolly Parton" further enhanced by the attachment of "Kontakt-1" reactive armour boxes. In terms of fire power the T-72B is also capable of firing 9M119 "Svir" laser guided anti-tank missile as well as the standard range of 125mm ammunition.



Moroccan Eland 90

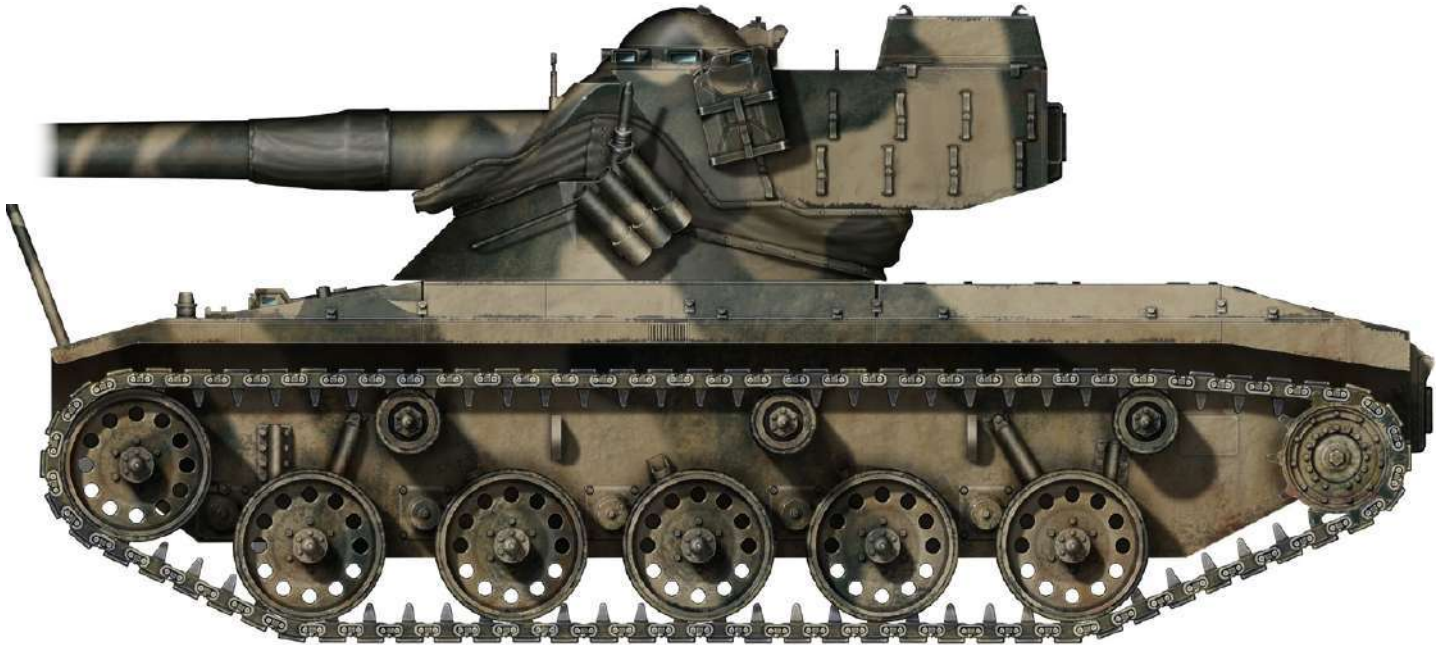
Having purchased a small amount of second hand Panhard AML 90's from France, Morocco began procuring Eland 90 Mk7 from South Africa in 1976. These vehicles were accompanied by a number of South African instructors who had experience of the type of search and destroy missions in Angola that Morocco now attempted to apply in the Western Sahara. Further deliveries of Eland 90s and the Ratel 20 turreted Eland 20s were obtained in 1978 along side actual Ratels. Over 30 of the Elands were lost in ambush to the Polisario front during various offensive actions and a number can be seen in Polisario camps to this day.





Moroccan SK-105 Kürassier

An Austrian built SK-105 Kurassier light tank, 110 of these tanks were delivered between 1978 and 1979 for the war in the Western Sahara, a number of them were captured by the Polisario and are still on exhibit in their military museum today.



Moroccan M60A1 Rise

Morocco purchased a wide selection of M60 variants including the M60 A1 RISE Passive, these Reliability Improvement for Selected Equipment variants feature infra red /white light capable search lights and Passive or Reactive explosive armour tiles mounted around the turret and hull front. These variants proved extremely successful for US marine forces in Kuwait in 1991 and a very effective defense against RPGs and various hollow charge war heads found on the battlefield likes Sagger wire guided missiles used by the Polisario.





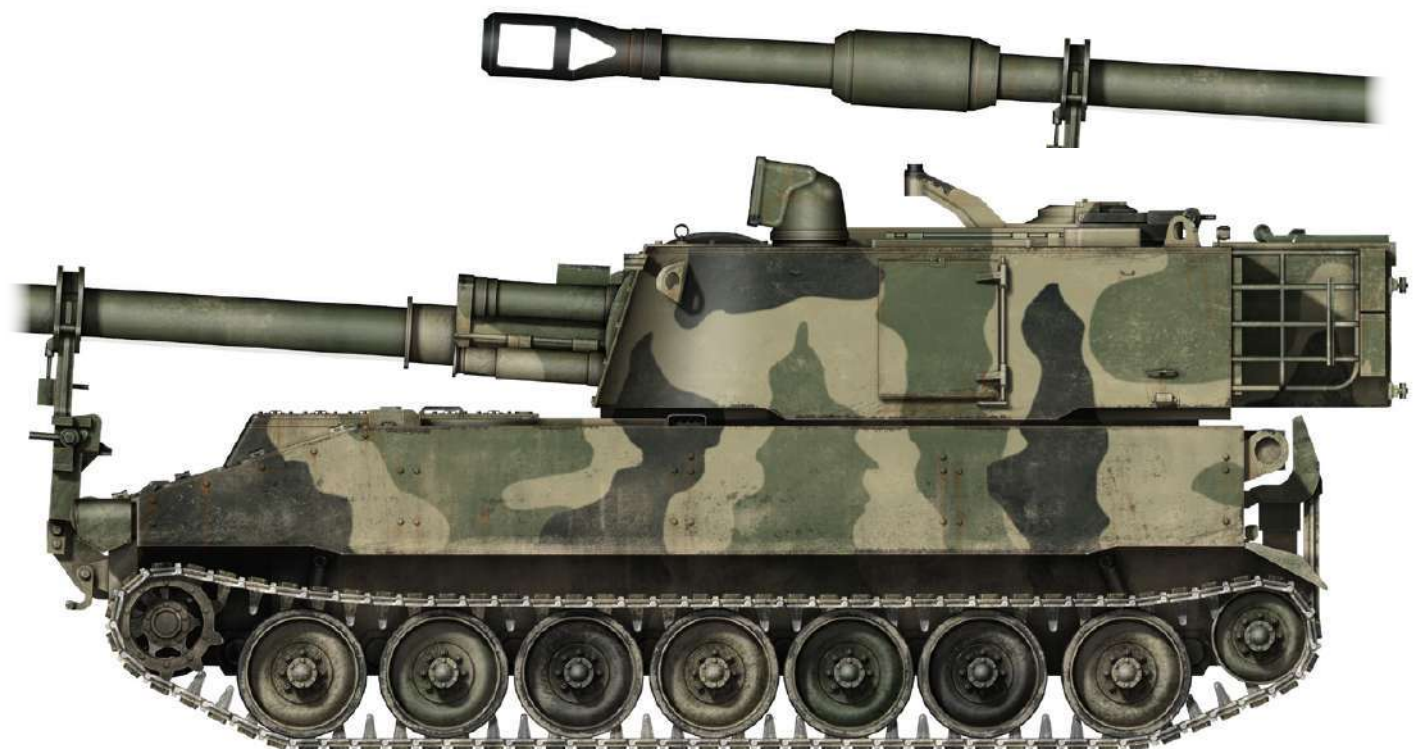
Moroccan Ratel 20/90

Having purchased numbers of Eland armoured cars from Sandock- Austral in 1976 the Moroccan army ordered a number of Ratel 90s and 20s taking first deliveries in 1978, a further 80 being ordered in 1979. The few images of these Infantry fighting vehicles in Moroccan service show them deployed in defensive positions along the Western Sahara wall but they were also engaged in raids into Polisario territory. In 2016 60 Ratel 20s and 90s were still in Moroccan service testament to the robust simplicity of these user friendly IFVs.



Moroccan M109A5

The M109 replaced the AMX Mk F3 SPG 155mm in Moroccan service. The 109s extra range over the F3 made it the ideal weapon for long range shelling and fire support missions against Polisario positions. The Moroccan army has obtained M109s from numerous sources including 70 A5s from the US in 2016, 43 A1s from Belgium, 40 A1s from Switzerland along with 60 variants originally supplied by the US and used in the Western Sahara conflict.





Moroccan Toyota with ZU-23

Like many Armies and Guerrilla groups throughout the middle east the Moroccan army utilizes large numbers of Soviet / Russian made ZU 23mm AA guns mounted on Toyota pick ups, Land rovers and light trucks. Operating over vast open expanses such weapons as the ZUs, KPVs and even M163s Vulcans are very effective in picking off Polisario raiding parties in similar vehicles



Moroccan Panhard M3 VTT

Morocco purchased 50 M3 VTT troop transporters from France in 1970s. These simple lightly armoured APCs are ideal for short range patrolling or convoy duty but lack the fire power or protection for anything else, it's also worth bearing in mind in terms of logistics it shares 95 percent of working parts with the AML 90 and therefore many Eland parts.





Moroccan Unimog with ZU-23-2

The ubiquitous Unimog 416 has again seen much service as transport and a gun truck with the Moroccan army in the Western Sahara conflict. These vehicles were widely used by PLO forces in similar roles in 1982. Now days the Moroccan forces have replaced these older variants with Unimog U1300 L2t gun trucks and Hummers with ZPU 14.5mm AA guns.



Moroccan M113 A1 with ZPU-2

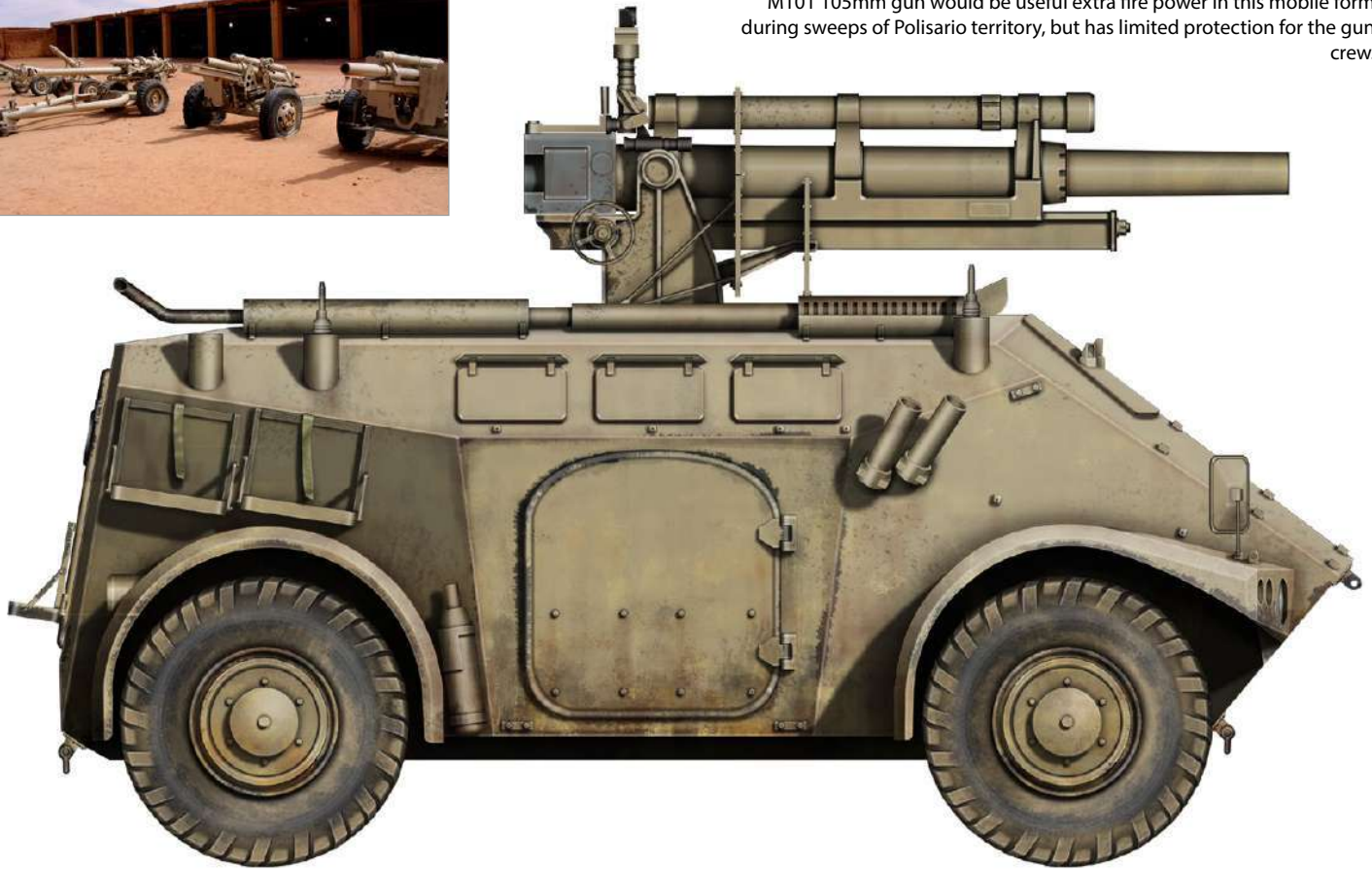
With over 1900 M113s in service with the Moroccan army a number have had ZPU AA guns mounted on their roofs while other TOW missile launchers. Of note in the reference photo is extra water drums carried on the side rails and ammo boxes. This photo is also of interest as it shows US senator Charlie Wilson on one of his trips in support of the Afghan Mujahideen.





Moroccan Panhard M3 VTT

This odd looking conversion was seen in a Polisario base camp on display with the captured remains of an Eland 90. The stripped down American M101 105mm gun would be useful extra fire power in this mobile form during sweeps of Polisario territory, but has limited protection for the gun crew.



Moroccan VAB 6x6 VCI Toucan

The French manufactured VAB six by six variant is widely used by Moroccan forces with 75 variants mounting the 20mm cannon seen here and 320 standard transport variants. These vehicles have also seen UN service with Moroccan forces in the Balkans and Africa.





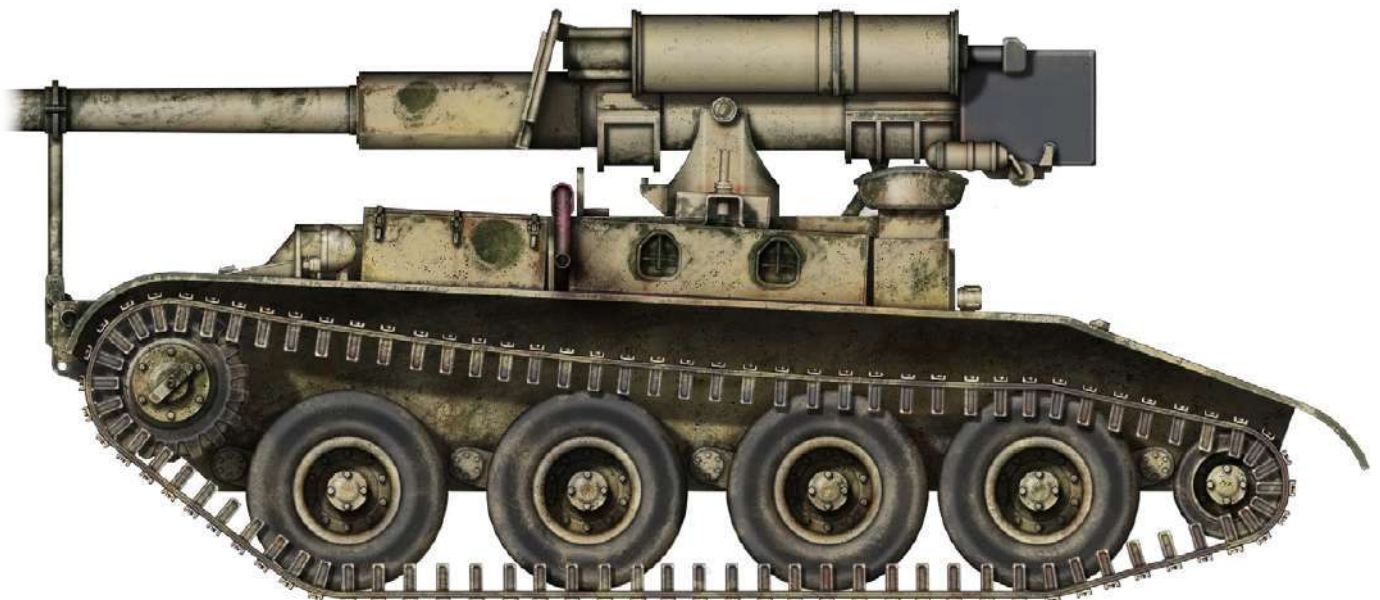
Moroccan M113 A1

M113 weighed down with crew luggage, during their long drawn out war in the Sahara, Moroccan forces used large white numbers or letters in conjunction with double white stripes on the top hulls and front of their vehicles for recognition.



Moroccan M56 Scorpion

The M56 Scorpion is more of a gun carrier than a tank, designed to be easily deployed by aircraft this 90mm SPG saw service in the Vietnam War with the 173rd Airborne Brigade and with Moroccan troops occupying the Western Sahara and patrolling the Sahara wall.





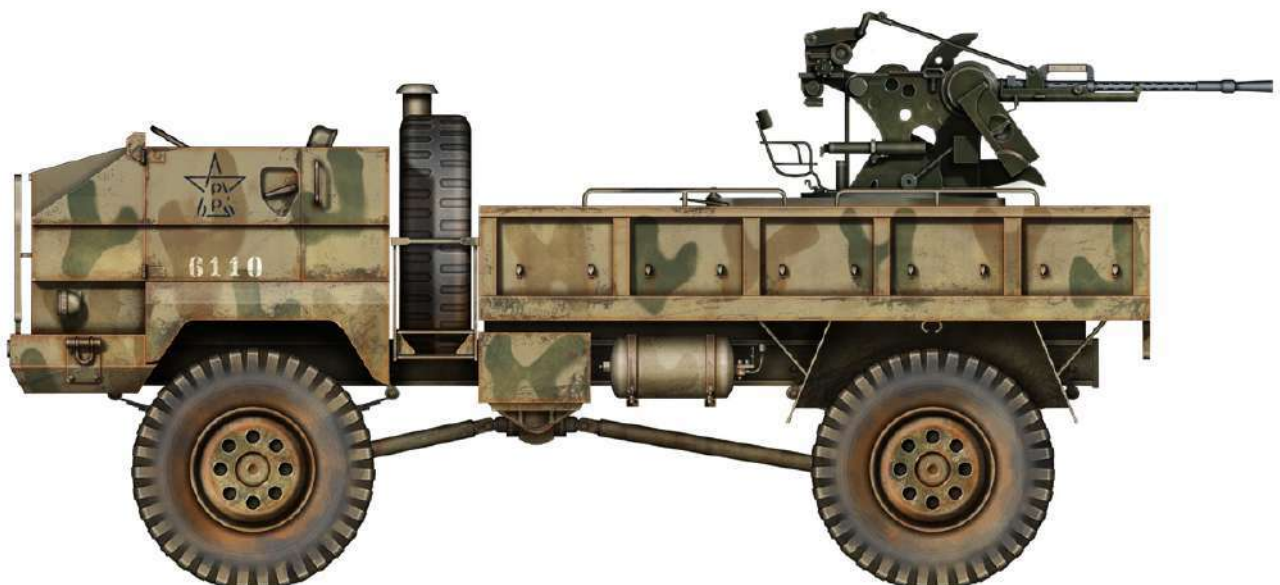
Moroccan M48A5

A Moroccan M48A5, starting in 1973 Morocco took delivery of its first M48A3, culminating with a final delivery of A5s in 1987 from US National guard stocks. These MBTs played a major role in the conflict in the Western Sahara, engaging and destroying Polisario T-54 and T-55s.



Moroccan Pegaso 3046 ZPU-2

The Spanish built Pegaso 3046 truck was used in a number of roles by Morocco troops. Over 1000 Pegaso trucks were utilised during the Sahara campaign including in gun trucks mode seen here with the KPV 14.5mm x2 AA gun.





2. REGULAR ARAB ARMIES

22

ALGERIAN ARMY

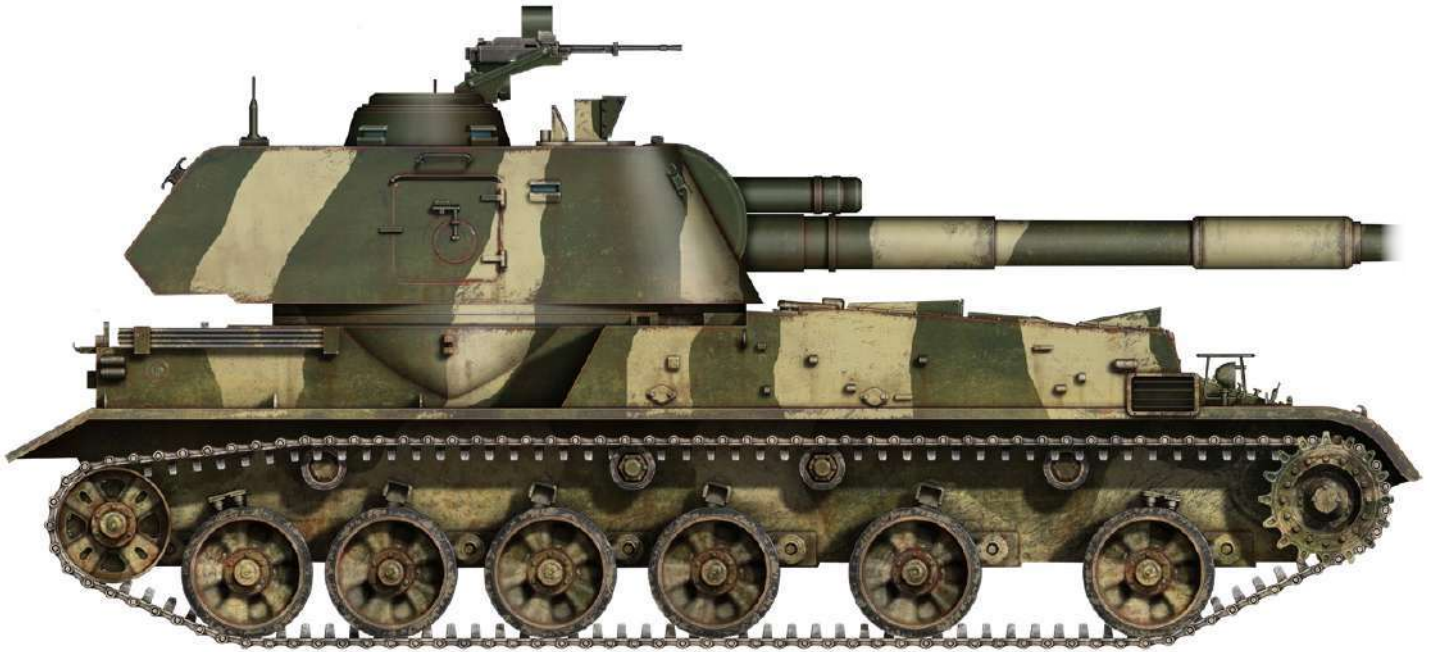
After a bloody 8 year struggle for independence Algeria achieved freedom in 1962. Algeria had not been considered a colony but an actual part of metropolitan France, the Algerian guerilla group the FLN or National Liberation Front had fought a brutal campaign against military and civilian targets. France for its part fought a ruthless counterinsurgency campaign. Subjected to bombing, brutality, torture and the use of other extreme measures by French paratroopers the FLN was soon subdued, however public opinion internationally and in France had turned towards granting independence, in reaction to this the OAS the Organization of the Secret Army a right wing anti-independence group staged a coup in Algiers and in Paris to return the Free French hero De Gaulle to power, a man they assumed would be anti-independence, but De Gaulle seeing the destruction to France caused by the endless conflict granted independence to Algeria. The first Algerian leader Ben Bella implemented a Socialist oriented regime backed by the Chief of the FLN army of liberation Houari Boumedienne, a man who would imprison Ben Bella after he staged a coup in 1965 and remain in power till his death in 1978. Boumedienne set Algeria on a course of pragmatic socialism but his rule was to be followed by a series of minor party candidates as the FLN was a synonymous for scam and corruption. By 1991 the people of Algeria were hungry for political change and forced elections on the ruling FLN. However when election results showed overwhelming

support for the FIS party or Islamic Liberation Front, the election was quashed. The army and the DRS or military intelligence under General Mohamed "Toufik" Mediene now began a brutal war of oppression against the Armed Islamic Group or GIA who conducted bombings and massacres against civilian, expatriates and military targets. Between 1992 and 1998 entire villages were slaughtered by both sides with an estimated 200,000 people killed and 20,000 disappeared. The terror inflicted on the people of Algeria during these times has left deep scars but also a fear of a recurrence of this dark period if the ruling FLN feels under threat again. For an over twenty years it was said that General "Toufik" Mediene and the DRS actually ran Algeria with a government of the people likes Bouteflika showing them were a mere facade. With two thirds of the youth of Algeria too young to remember these dark times and desperate due to poverty, lack of housing or jobs opportunities it is perhaps only a question of time before the next generation of Algerians again demand change. While the population feels the despair of grinding poverty there has been no shortage of funds for the Algerian army and airforce sophisticated Russian Su-24s, SU-27 and MIG-29 SMT have replaced earlier Soviet designs while over 300 T-90SAs and 100 BMP-3S are in service. Algeria has in recent times introduced minor reforms but only time will tell if these are real or a pretence.



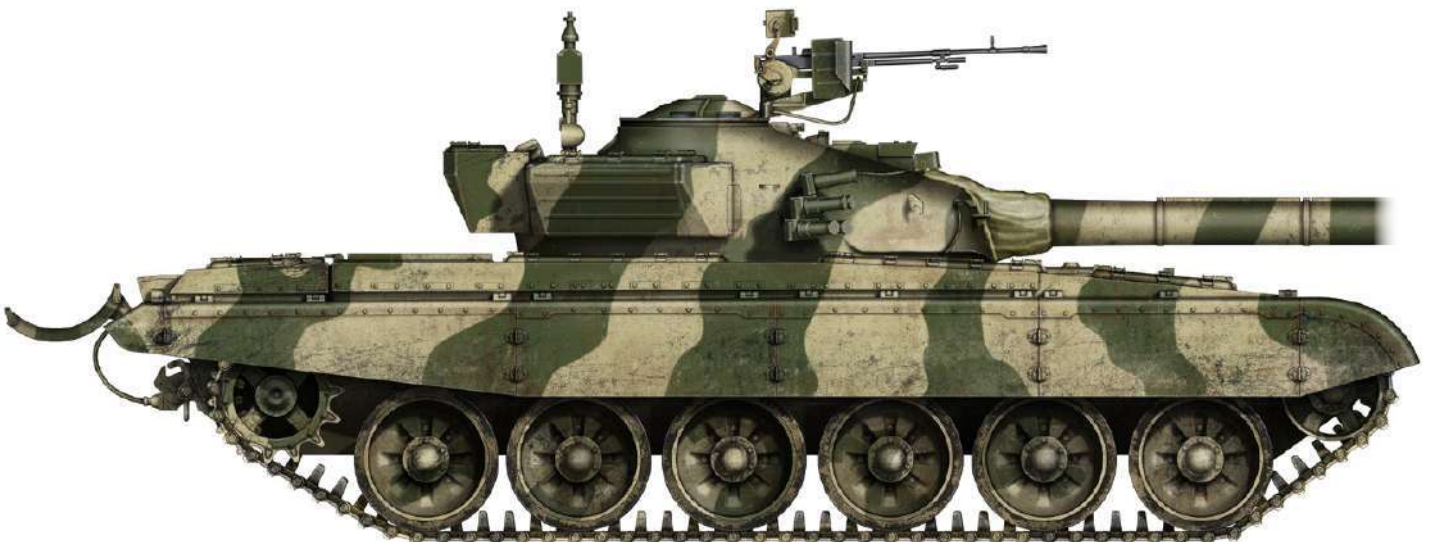
Algerian 2S3 SPG

The 2S3 Akatsiya 152mm SPG has been used in conjunction with the 2S1 122mm SPG by Algeria for many years. As a Soviet alternative to the US manufactured M109 the 2S3 was widely exported to the developing world seeing extensive action not only in Iraq and Syria but also in Chechnya, Afghanistan and Ukraine.



Algerian T-72 M1M

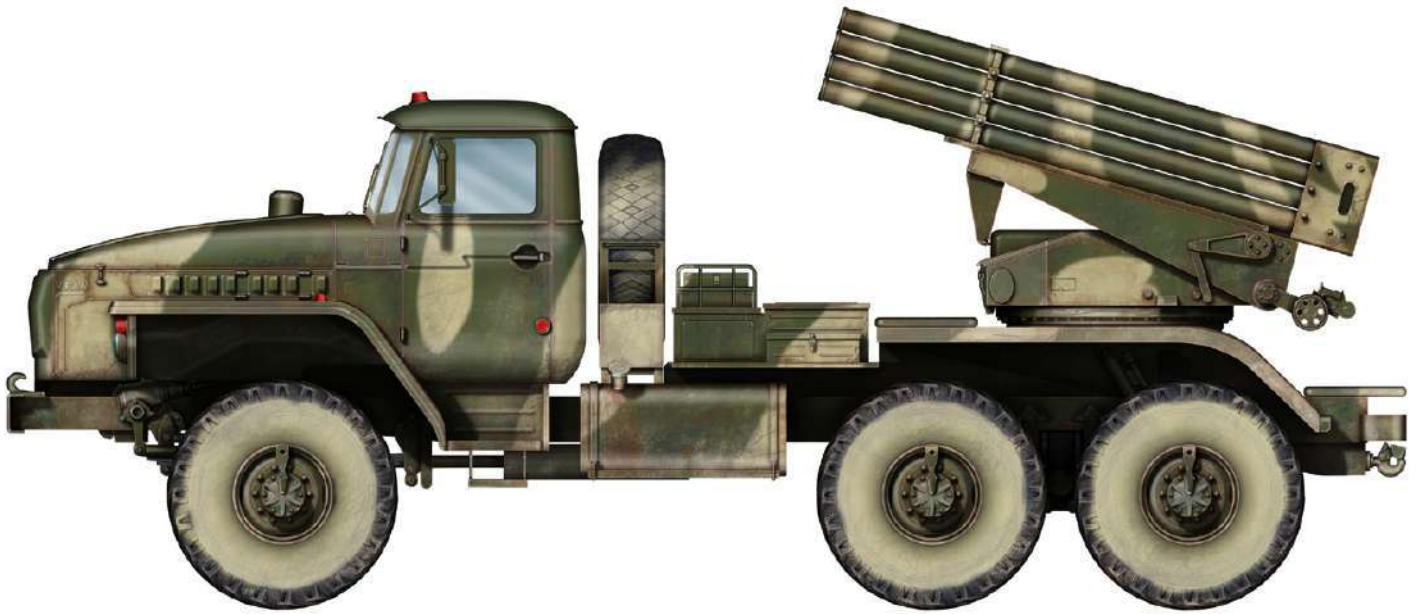
Algeria is one of Russia / Soviets most trusted and long standing customers, as such was one of the first to receive the earliest T-72 Ural variants followed by T-72 M, T-72M1 and AG variants. One of the more interesting updates considered by Algerian forces was a South African version mounting two large sight systems on the turret produced by ATE . Algeria is now in the process of updating older T-72 models to T-90 standards while purchasing 370 T-90SA direct from Russia aswell as licence production agreements for a further 200.





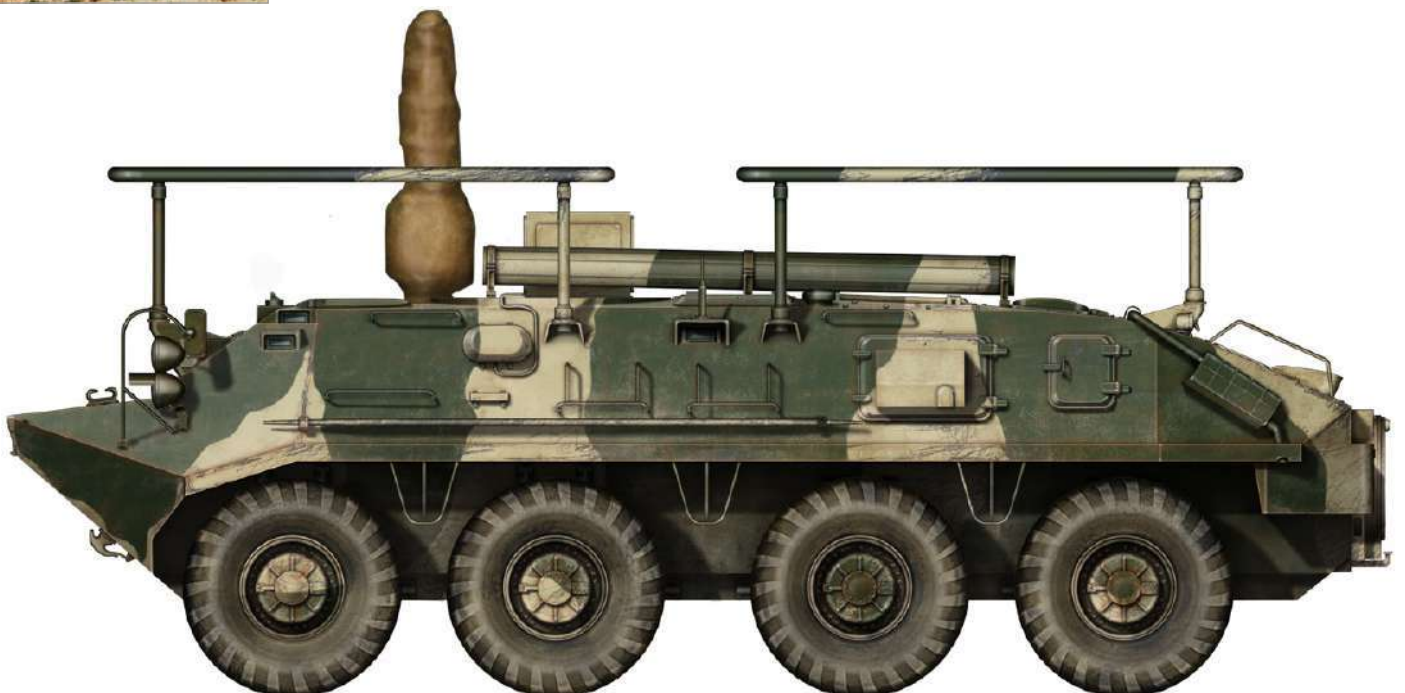
Algerian BM-21 Grad

With over 200 BM-21 MRLS in service with Algeria this simple and robust rocket launcher has seen massive use through out the globe. The Ural based BM-21 is being further supplimented by the larger and long range BM-30 Smerch.



Algerian BTR-60 PBK

The BTR-60 R-145BM command and control vehicles of this type are normally associated with air defence units equipped with ZSU 23-4 Shilka and SAMs such as the SA-6 and SA-8. Standard BTR-60 APCs are further supplimented by Czech OT-64s and newer BTR-80s.





Algerian Panhard M3 VTT

Algeria procured 50 French made M3 VTT for policing and internal security duties along side a number of AML 60s this vehicles would no doubt have been extremely useful during the long and bloody Islamist insurgency.



Algerian T-90 SA

The Algerian military signed a contract in 2014 with Rosoboron export thus acquiring it's first third generation battle tank. Equipped with a 125 mm 2A46 smooth bore gun, thermal sights, Kontakt-5 ERA, laser warning receivers and Shtora ATGM jamming systems these latest MBTs are seen as a match for Morocco's M1 Abrams.





2. REGULAR ARAB ARMIES

2.3

LIBYA CIVIL WAR

To get a grasp on the recent history of Libya and its various conflicting groups one must go back to the military coup of 1969. In this year little known Colonel Muammar al-Gaddafi took power and began the transformation of Libya into Islamic Socialist state or his version of it. While he implemented housing, health care and educational programmes at home his erratic approach to foreign policy quickly led to conflict with neighbouring Egypt in the 1977 border war and a series of unsuccessful campaigns in fellow neighbouring Chad throughout the 1980s. Small detachments of Libyan troops were also sent to try help Idi Amin during the successful Tanzanian invasion of Uganda in 1979. Gaddafi longed for international recognition and insense wanted to become a figure head of a global anti imperialist movement buying favour and donating arms throughout the middle east and Africa. His arms shipments to the Irish Republican Army in the late 80s and other guerilla groups around the world are well documented. The US conducted a series of air-raids in 1986 in response to Libyan night club bombing in West Berlin in the same year. Other out rages would follow over the years the worst being the Lockerbie bombings which destroyed Pan-Am flight 103 over Scotland. Libya became further isolated but could obtain arms form various nations. While Gaddafi stock piled millions of dollars worth of Tanks, APCs, SPGs and fighter air craft from Russia, Europe, Brazil and North Korea he lacked the personnel to use it properly. Gaddafi was never really in a position to be a conventional threat in the region. With the Arab spring revolution came to many North African states, in Libya the uprising started in Benghazi in February 2011. These protests were put down by the army with 290 shot, but only spread to other cities such as Misrata, Al-Bayda and Tobruk soon these towns were firmly in rebel hands. NATO air strikes quickly turned the tide against Gaddafi's armoured forces destroying Libyan T-72s and Palmaria SPGs on the move to Benghazi. The Libyan rebels took to their land cruisers and pick ups with various light anti aircraft guns and brought the war to the capital Tripoli, ultimately capturing and killing Gaddafi who had been found hiding in a drainage pipe, a pitiful end for the once great dictator. Democracy did not break out in Libya however and various factions now tried to take power uniting only briefly to defeat ISIS in the city of Sirte in 2016. Since then Libya has been split between Egyptian backed Military strong man Field Marshal Hifter and the House of Representatives, the Government of National Accord led by Al-Sarraj and the General National Congress led by Al-Ghawil backed by hard line militas, not to mention Al Qaeda and ISIS remnants. Whatever the outcome of Libya struggle remains to be seen at this time, but the vast collection of pick ups, gun trucks, tanks and Mad Max vehicles will surely not remain idle for long.



A free Libyan army Toyota Pickup
with a ZU-23-2 Anti-Aircraft gun mounted in the rear. Such lash
ups are extremely common throughout the Middle East combat
zones.



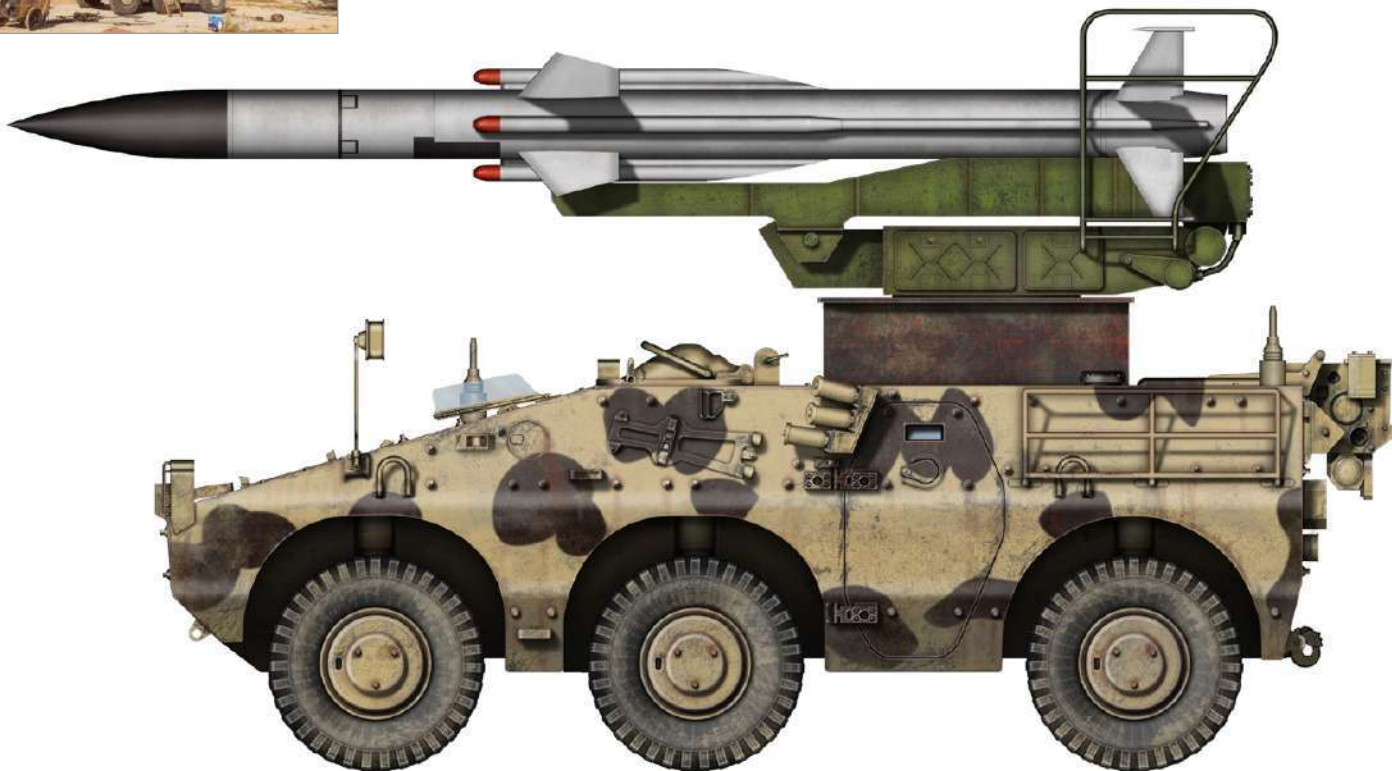
Libyan Rebel BTR-60
Under Gaddafi the Libyan military received thousands of Soviet
Tanks and APCs, at one point the Libyan Army operated up to
750 BTR-60s, starting with 100 PB variants ordered in 1974. This
particular vehicle is interesting for a number of reasons firstly
it appears to have a late model BTR-80 turret or the rear smoke
launchers system associated with them and secondly the access
hatch or doors in the middle of the vehicle appear to be those
of a Bulgarian BTR-60 PB-MD1 but without the other additional
adaptions.





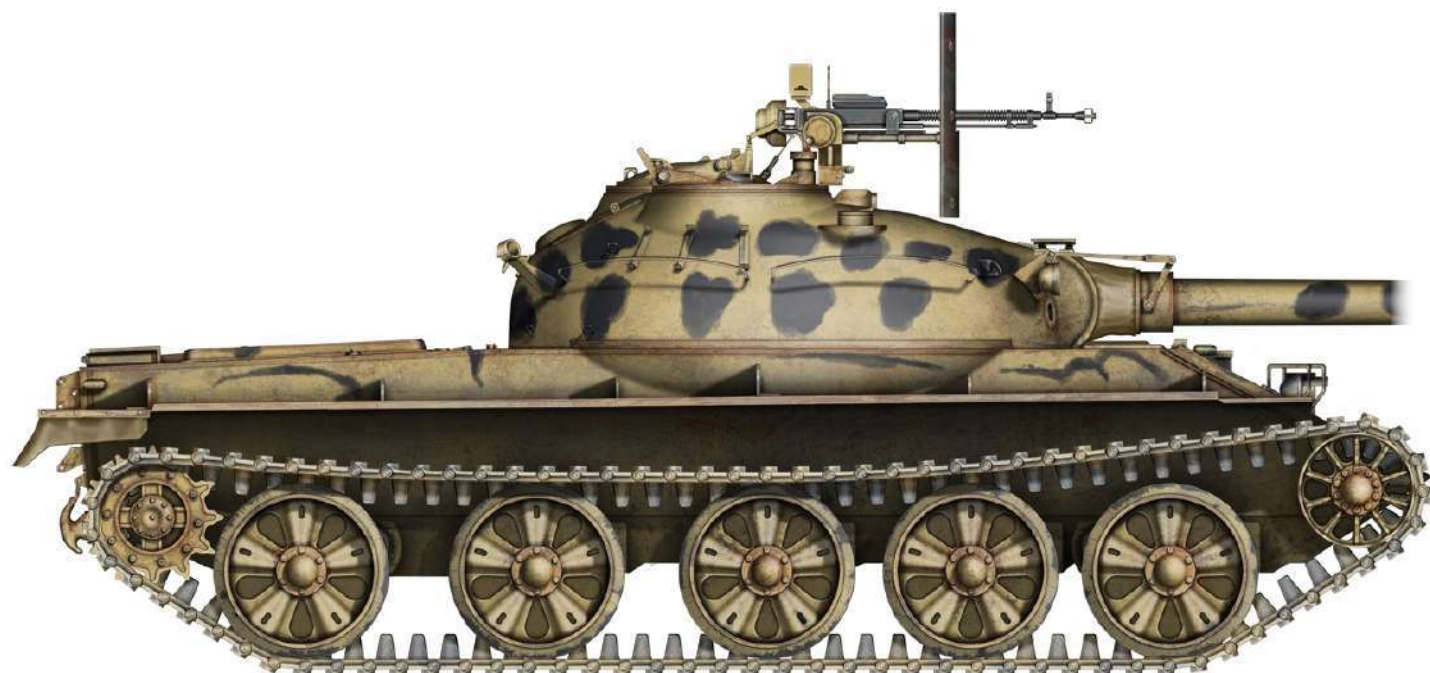
Libyan Dawn group Puma 6x6 with SA-6 Gainful (2k12 Kub)

The Libyan National Army received a small number of former Italian army Puma APCs in 2013. Libyan Dawn converted a number of these by mounting SA-6 and SA-3 Surface to Air Missiles on the upper hulls as surface to surface missiles. Like Iraqi attempts in the late 80s these no doubt encountered problems with the highly complex guidance and control systems, not to mention the waste of such assets.



Libyan rebel T-62 Model 1972

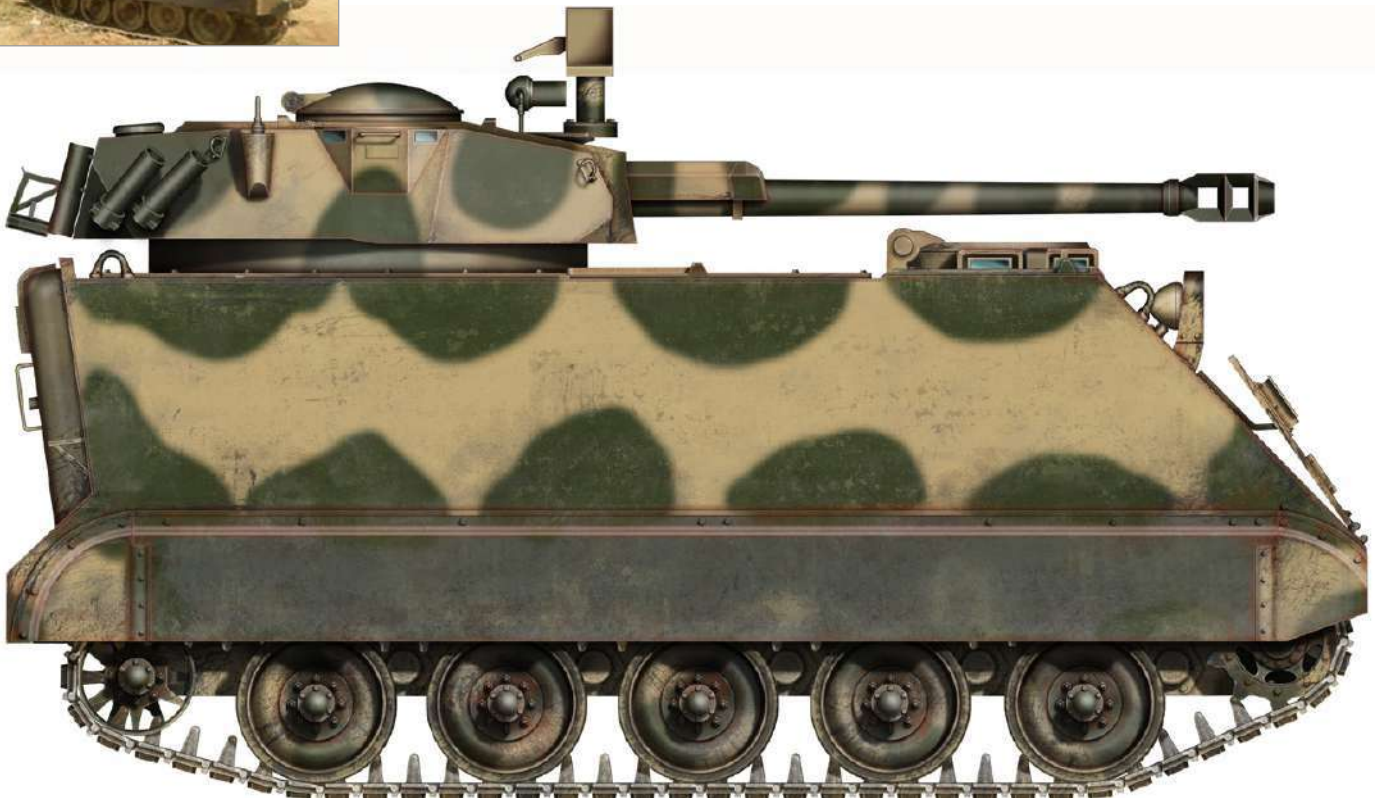
While not as well documented as the T-55 or T-72 in Libyan service, the Libyan T-62s first saw service in the Toyota Wars against Chad. A number of ex Libyan T-62s were captured and pressed into Chadian service. More recently former Libyan army T-62s have seen action with militants fighting ISIS in Sert. This T-62 has an improvised armor shield mounted around the DShK 12.7mm AA gun.





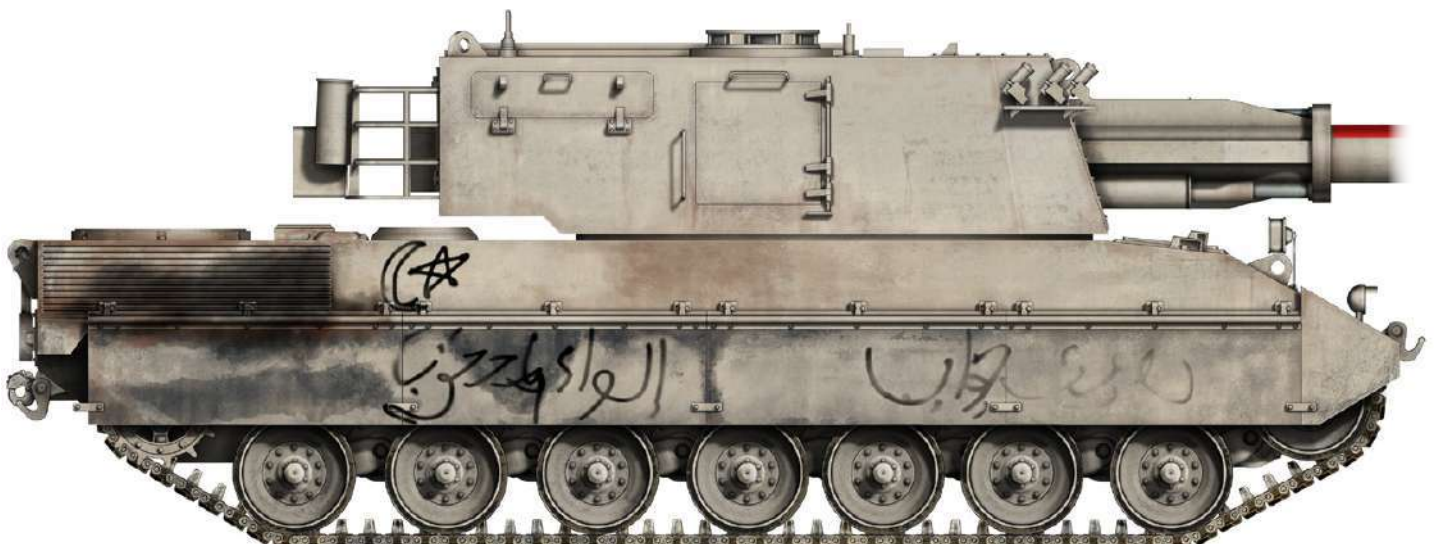
Libyan M113 with AML 90 turret.

This former Libyan army M113 is fitted with a French AML 90 turret for extra fire power. Libya obtained a large number of early model M113s from the United States as far back as 1966 well before the break in relations caused by Gaddafi's foreign policies. Testament perhaps to the M113s ease of maintenance and sheer simplicity.



Libyan OTO-Melara Palmaria 155mm Self-Propelled Gun

Under Gaddafi Libya ordered 210 of these heavy Italian SPGs. Based on the OF 40 tank chassis the Palmaria was designed for export. This was one of a large number of vehicles including DANAs, M109s, Scuds and 2S3s found in artillery depots after the fall of Gaddafi.





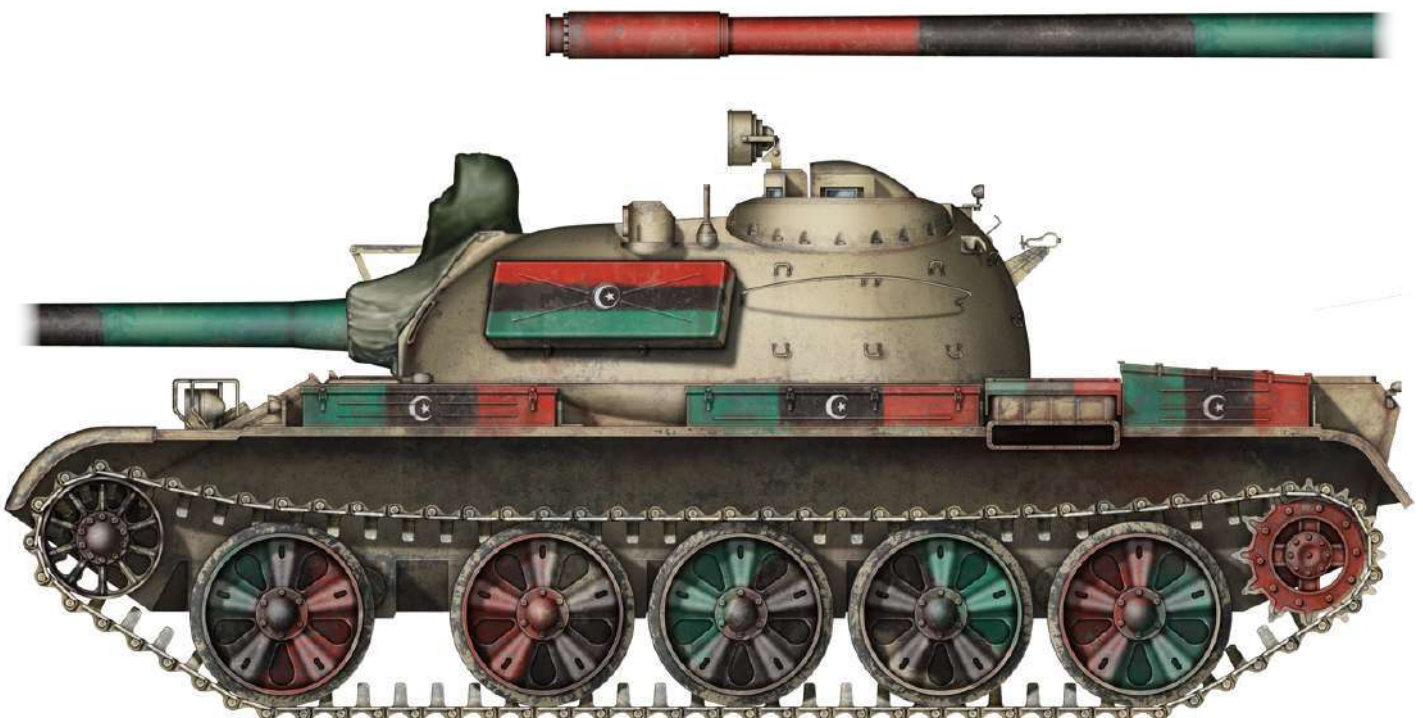
Libyan M109A1

The M109 is no stranger to conflict in the middle east with long barrel variants in service with Israel, Egypt, Iraq and Iran, this Libyan version is an early short barreled variant one of 25 supplied to Libya before Gaddafi seizing of power in 1969. It was removed from army storage and used in the battle of Sirte in 2016 along side gun trucks and Italian made Palmaria SPGs.



Libyan Rebel T-55

This very colourful rebel T-55 is a Polish built variant, originally painted overall sand it has decorated with multiple Libyan flags of the pre Gaddafi regime to avoid friendly fire.





Libyan Rebel T-72 Ural Variant.

This Ural model T-72 is one of the first delivered to Libya in the early 80s. Fury is stripped of it's side mounted fuel cells and many of it's fitting having been well used by its new owners, it still retains it's original Libyan army Sand and Green camouflage scheme.



Libyan Rebel Ratel

This South African Ratel IFV is minus it's 20mm bush cannon but in its place is an old Soviet designed UB-16-57UMP aerial rocket pod. This Ratel and Centurion or Tariq tanks were part of a package of assistance provided to the Libyan Transitional Army by the Jordanians.





Libyan Rebel M577 / BMP-1 Hybrid.

This extremely colourful conversion of what seems like the command variant of the M577 series, rather than a M113 with an extra metal box extension added, has a Soviet manufactured BMP 1 turret for the some what dudious 73mm rocket gun fire power, the rebel flag based on the old pre revolution flag not offering much in the way of camouflage.



Uparmoured Rebel T55

During the desperate defence of Benghazi, a small number of rebel T-55s fought with Gaddafi's forces. These T-55s had up armoured in a fashion similar to late model Panzer IVs in WW2. By welding on parts industrial "I" beam and plate armour rebels hoped to add some extra protection to their vehicles. In the end French aircraft saved Benghazi by obliterating Pro Gaddafi forces on the outskirts of Benghazi.





Former Libyan army EE-9 Cascavel

These Brazilian armoured cars were extremely popular throughout the middle east. The Libyans purchased 500 of these vehicles which a 100km/h speed with a 90mm main gun. Libya first used the earlier MK-II with an AML-90 turret against Egyptian forces in the border war of 1977. During Gaddafi's disastrous intervention in neighbouring Chad, Libyan forces abandoned nearly 80 of these vehicles in the Aouzou strip along with millions of dollars worth of other equipment. The Casavel saw action again in Libya during the revolution and in the battles with ISIS forces in Sirte.



Libyan Rebel VT-55 / BTR-60 conversion

This rather odd armoured conversion has all the appearance of a double decker bus. The base of the vehicle consists of a Czechoslovakian VT-55 Armoured Recovery Vehicle (as noted by the side mounted driver's hatch) minus its upper crane and stowage. On top of the ARV is mounted the BTR-60 with a support cage





Libyan ZSU-23-4

A Libyan Army ZSU-23mm Shilka, this vehicle was spotted in a convoy of Revolutionary Guards Corp, Gaddafi's trusted Jamahiriya Guard. This camouflage scheme is one found on elite units of Gaddafi's armoured corps consisting of sand and very green.



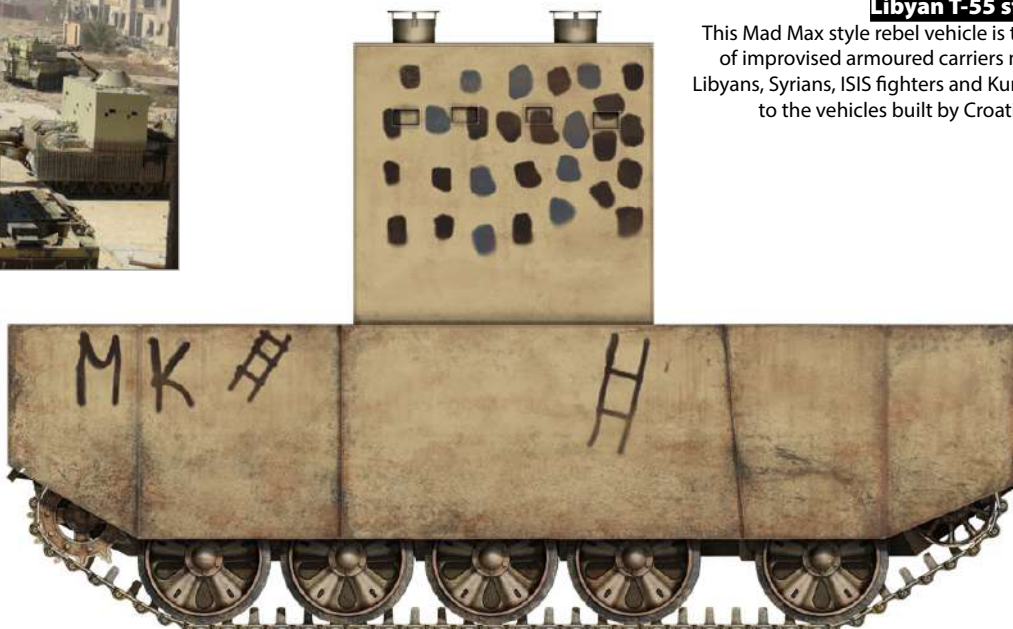
Libyan Mad Max

This Mad Max style rebel vehicle is typical of the types of improvised armoured carriers manufactured by Libyans, Syrians, ISIS fighters and Kurds. They hark back to the vehicles built by Croatian fighters in their Homeland war. This particular vehicle is interesting due to the inclusion of the BMP1 turret, oddly enough these turrets have turned up on many other home made APCs across the Middle East.



Libyan T-55 style conversion

This Mad Max style rebel vehicle is typical of the types of improvised armoured carriers manufactured by Libyans, Syrians, ISIS fighters and Kurds. They hark back to the vehicles built by Croatian fighters in their Homeland war.





Libyan rebel Toyota pickup with KPV.14.5mm AA gun

Libyan rebel Toyota pickup with KPV.14.5mm AA gun, the Libyans had been particularly impressed by the use of Toyota pick ups in the Toyota Wars in Chad during the 1980s where their forces suffered at the hands of Chadian forces. In a throw back to the Long Range Desert Group of WW2 Chadian forces struck in ambushes of much more heavily armed Libyan opponents. This tactics were once again used by rebel forces against Gaddafi's forces during the Revolution and in the months after.



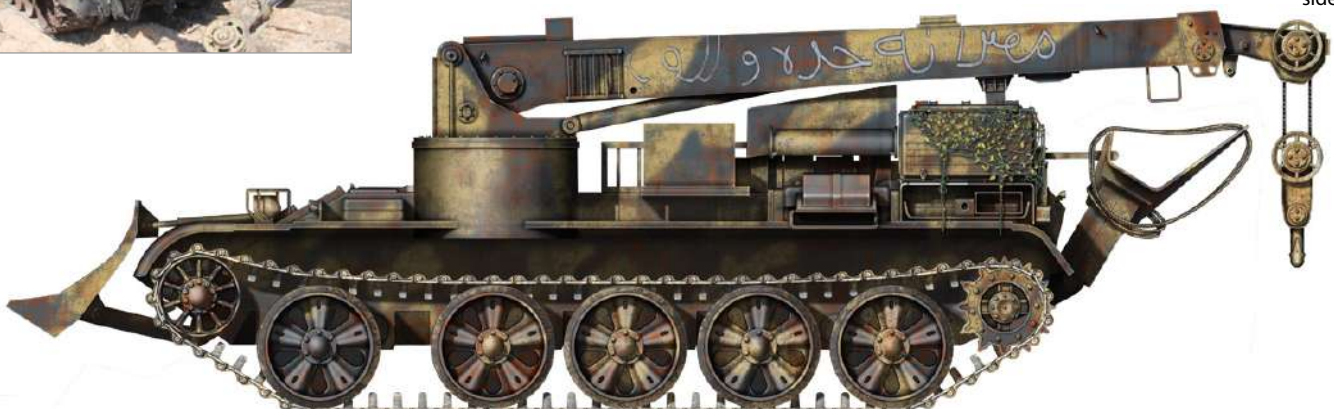
Libyan rebel MT-55 / BTR-60 conversion

One of the more visual pleasing Libyan conversion is this MT-55 bridge layer chassis mated with the eight wheeler BTR-60 APC. This chunky APC took part in the fighting between Western backed Libyan rebels and ISIS in the coastal city of Sirte.



Libyan JVBT-55

The JVBT-55 were produced by ZTS Martin in former Czechoslovakia, these heavy lifting crane tanks feature winches, plows and large crane along with tools required for engine repairs and vehicle recovery. The JVBT was used by Libya for a number of years with at least one abandoned in Chad. Syrian forces deployed some in Lebanon and towards the end of the civil war in Dara. Iraqi forces made major use of these ARVs in the Iran-Iraq war recovering hundreds of their own and Iranian tanks. Iraqi variants have been seen minus BTU bull dozers, with numerous fittings missing while one in Kuwait in 1991 had Chinese side skirts.



2. REGULAR ARAB ARMIES

2.4

SUDAN ARMY AND SPLA VEHICLES

North and South Sudan

Having gained independence from Britain in 1955 the Sudanese armed forces consisted of more than 5000 members; this was quickly expanded to deal with an ongoing counter insurgency in the South and West. Sudan, once the largest in Africa was effectively ruled in the north by Muslim Arabs while the South was made up of Christian and Animist Africans. The Sudan military obtained it's first armed vehicles from Britain in the form of Saladins and Ferret armoured cars. Further arms shipments were obtained from the Soviet Union, China and the United States leading to BTR-50s operating side by side with Type 62 mountain tanks and V-100 commandos. During the Cold War, Sudan was seen as a possible bulwark against Soviet expansion in neighbouring Ethiopia and the United States provided advanced equipment such as M60 tanks and F-5E fighter aircraft. With the end of the Cold War, Sudan underwent political change with the coming to power in a coup in 1989 Omar Al Bashir, it was during the 90s that Osama Bin Laden was allowed a safe haven by Khartoum. Sudan's oil insured large scale purchases of Chinese armour such as the Type 85 II, Type 59D and YW-531 APC's to mention a few. Side by side with Chinese tanks and an assembly plant in Khartoum, the South of the country gained independence in a referendum in 2011 ending the North's war in the part of the country but not in Darfur in the west. North Sudan continued an eclectic pattern of procurement obtaining Cobra's BMP-1 based APC and BTR-80 conversions made in the Czech Republic, BTR-3 and T-72 AVs from Ukraine and Safir-74's from Iran. Sudan maintains and repairs her mixed fleet of MBT's, IFVs and APC's at the Military Industry Corporation workshops in the centre of Khartoum and is now manufacturing a series of jeeps, APC's and truck based self-propelled guns.



Sudan MAN KAT1

The Sudanese military procure armoured vehicles and transports from a wide variety of channels. This ex Bundeswehr MAN truck was obtained by Sudan from the Dutch company Van Vliet Trucks Holland BV between 2011 and 2012, numbers of these and the 4x4 type 461 seeing action in the Nuba mountains where examples were captured by rebels from the Sudanese 14th division. The German Ministry of Economy subsequently restricted the re-export of such vehicles to Holland due to the lack of end user certificates and on going conflict in Sudan.



Sudan M60 A1

One of a very small number of Sudanese M60A1 Pattons are reported still in service, delivered during the 80s by the US as a counter to Soviet deliveries to Ethiopia. A number of these M60s can be seen lined up decommissioned in Military Industry Corporation yards in Khartoum a small number of M60s and other vehicles were deployed to the streets of the capital after a failed mass raid on the capital by the Justice and Equality Movement "JEM" rebels in May 2008.





Sudan SPLA T-55

One of a number of Sudanese People's Liberation Army T-55s entering their new capital of Juba in 2011 upon independence for the new state of South Sudan. These tanks were ex Sudanese army T-55s captured in battle and included a number of T-55M with KDT-1 laser range finders mounted above their main guns.



Sudanese Type 96/Al Bashir

Sudan has become a major recipient of Chinese equipment in the last number of years due to competitive pricing and the willingness of the Chinese allow licence production and assembly. The Type 96 originally known as the Type 85II has a 125mm main gun, fire control system and laser range finder. Sudan fields 200 of these MBTs and small numbers have already fallen into the hands of the SPLM-M rebels.





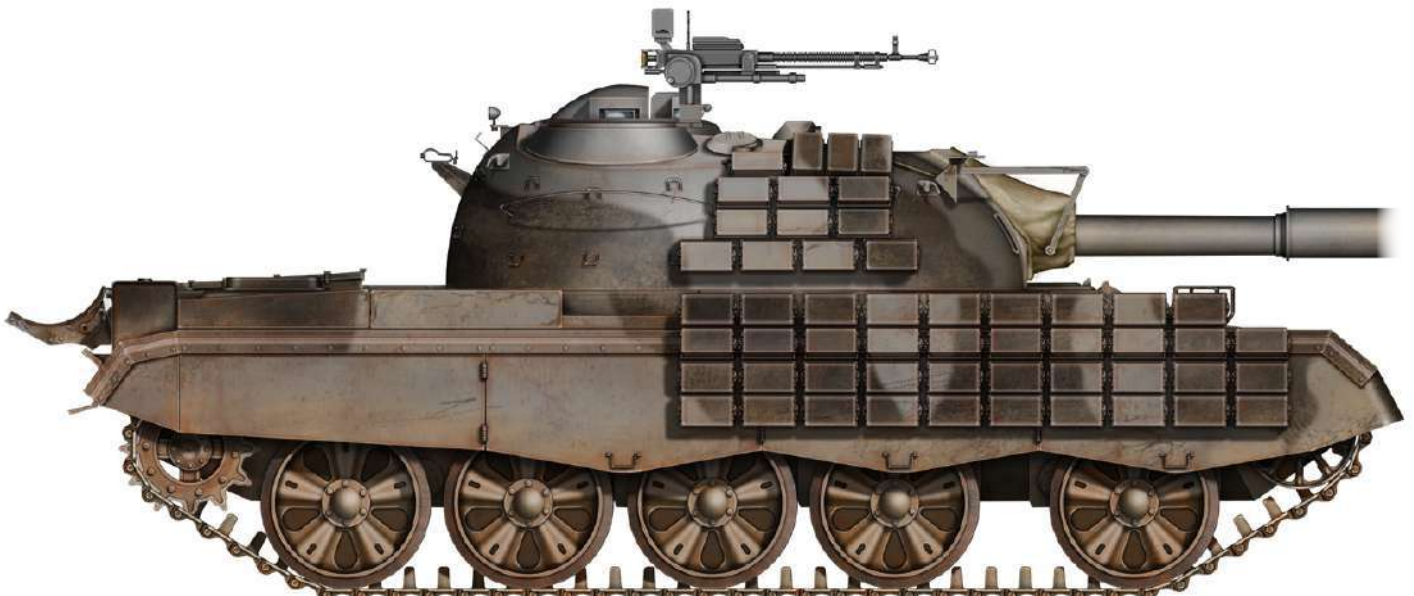
Sudan T-72AV

Sudanese T-72AV / Al Zubair 1 these Ukrainian supplied T-72s have seen a lot of action against the SPLA-N. In battles these tanks has a distint advantage facing rebels with RPG over the chinese supplied Type 96 or Al Bashir tanks. Of note is the fact the same tanks have been supplied to neighboring South Sudan from Ukraine as well which could lead to major confusion in future conflicts between the two countries.



Sudanese Safir-74/ Type T72Z / Al Zubair 1

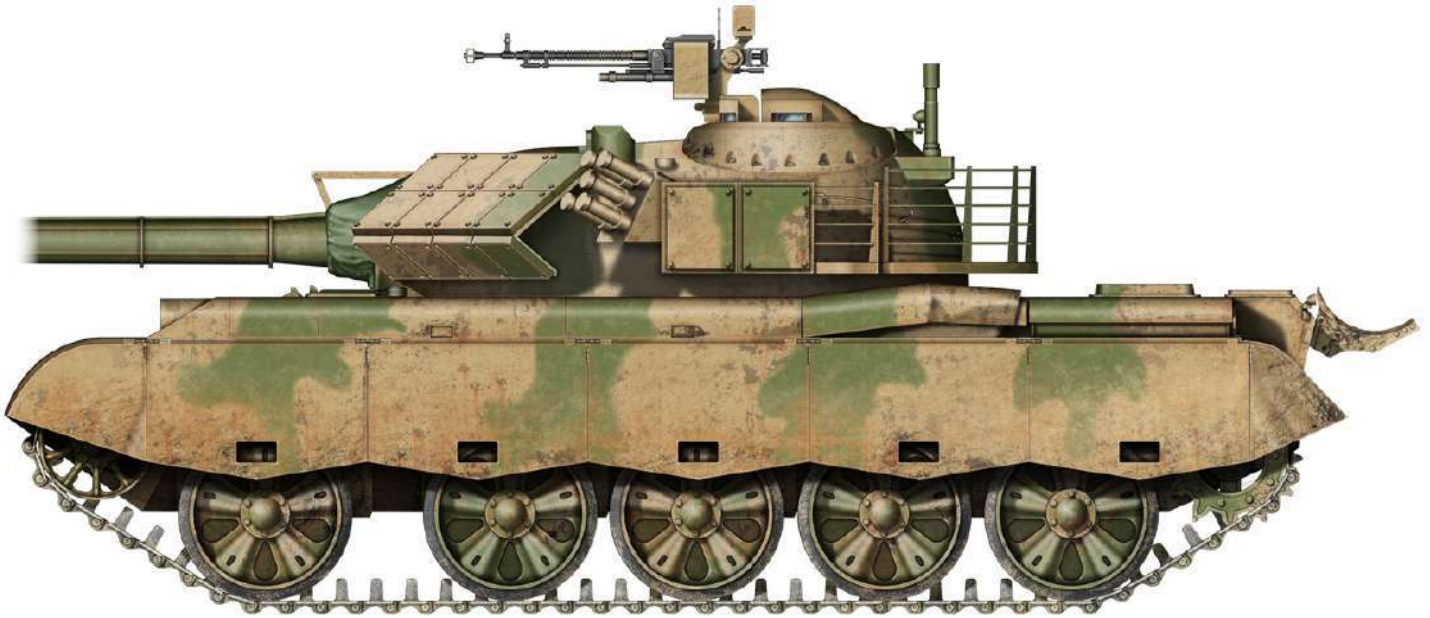
The only customer outside Iran for this Revolutionary Guard T-55 upgrade is Sudan. At one point Sudan had good relations with the Islamic Republic before choosing closer ties with Saudi Arabia. The Safir 74 consists of various T-55, Type 59 and 69 models being re-engined with a 780hp V46 diesel engine, a new main armament in the form of a 105mm HM-49L (L7 105 copy) Slovenian Fontana Fire Control System and ERA or reactive armor tiles.





A Al-Zubair 2 or Type 59 D

There are thought to be at least 100 of these tanks in service in Sudan which may now be updating older models. The Type 59D features additional protection in the form of ERA Armor tiles mounted on the turret sides and front hull along with an advanced fire control system and on newer models a Type 83A 105mm main gun.



T-55 SPLA

This Sudan People's Liberation Army T-55 in Malakal 2013, bearing a type of camouflage similar to that found on Sudanese Army tanks indicating it's probably a battle field capture. The side skirts and side stowage rack are improvised affairs.





Sudanese T-55 Hybrid

This Sudanese army T-55 was one of a group of vehicles captured by SPLA-N in the Blue Nile area. Weapons including Iranian manufactured D-30s, Chinese APCs and this hybrid T-55 consisting of a T-55AM turret minus its horse shoe armor and KDT 1 laser range finder mounted on a earlier T-55 hull are typical of some Sudanese army battle groups. Other T-55AMs have been seen with bow armor and LRFs but also missing their horse shoe armor.



BMP-1 Cobra S

A Sudanese army Cobra S turreted BMP, these updated BMP-1s feature BMP-2 side skirts and a low profile Cobra turret featuring a 2A42 30mm cannon. Sudan purchased a number of these updated BMPs developed by Slovakian company ZTS Special Trencin in late 1990s, Cobra S turrets were also mounted on some Sudanese BTR-80s.





Sudanese WZ 551 Shareef 2

Sudan use and assembles large numbers of Chinese WZ 551 and WZ523 APCs.

This vehicle was one of a large group vehicles captured by the Sudanese People's Liberation Movement-North (SPLM-N) in a major engagement in April 2016. Second front Blue Nile under Gen Ahmed Alomda Bade captured 55 vehicles including WZs, BMP1s and BTR 80s.



Sudanese BTR-82A Shareef 1

Sudan use the BTR-80, BTR-80 Cobra and BTR-80A with its 30mm gun turret it has much improved range over the standard KPV 14.5 mm gun of the 80 variant. It is fully amphibious but with a YAMZ-238 M2 can be prone to over heating and some what under powered over rough terrain as I found in Ukraine driving the standard 80.



Sudanese Safir-74/Type T72 Z /Al Zubair 1

These Chinese manufactured Mine clearing tanks have been seen during military parades in Khartoum. The GSL-130 can be fitted with mine plows of Chinese design or KMT 4 mine rollers,a mine clearing line charge can be launched from the large boxy housing mounted above the Type 59 hull. These vehicles have also seen service with Chinese forces serving with the UN in Lebanon in 1987.





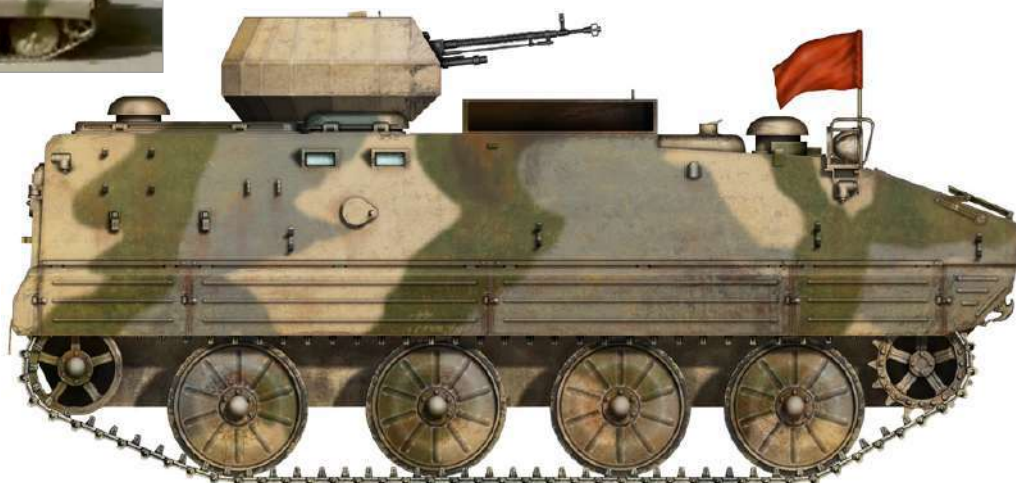
South Sudanese Toyota pick up with Chinese Type 63 MRLS

One of a number of South Sudanese army vehicles used during the retaking of the town of Bor and Pariak in 2014. Such formations with units of commandos and Dinka tribes men are standard in the power struggle in newly independent South Sudan.



Sudanese YW 531C APC

The Type 62 or YW 531B APC is essentially the same APC introduced by the PLA in the late 1960s and exported to Vietnam, Sri Lanka and Iraq. The addition of the armoured cupola for the machine gunner is a more recent addition to this cheap and cheerful Chinese equivalent to the US M113.



Sudan URAL 4320

This Ural truck was one of ten, eight Toyota Land Cruisers captured by the SPLM-N guerrillas in an attack Alrom in the Blue Nile region. Of note are the large tires and bonnet from a different Ural.





2. REGULAR ARAB ARMIES

2.5

MODERN EGYPTIAN ARMY

Following the Yom Kippur war of 1973, Egyptian leader Anwar Sadat made peace with Israel after decades of war at the Camp David with Israeli Prime Minister David Ben Gurion and US president Jimmy Carter. For this move Egypt would be expelled from the Arab league. Sadat was to be assassinated during a military parade in 1981 and replaced by his vice president Hosni Mubarak. Mubarak was to remain in power from 1981 to 2011. Egypt sent troops to fight in the 1991 Gulf war and by this time Egypt was once again accepted back into the Arab league. While Mubarak privatized large sections of the economy, he also jailed opposition politicians and his regime became associated with cronyism and massive corruption. Inspired by a popular uprising in Tunisia, Egyptians flooded into Tahir square demanding the removal of Mubarak, violence ensued and elections were held in which Egyptians voted for Mohamed Morsi and the until recently the outlawed Muslim brotherhood party. Morsi began to try and side line the Mubarak era judiciary and grant himself unlimited powers with the support of an Islamist dominated constituent assembly. After protests by anti-Morsi groups in 2013 the military under General Abdel Fattah el-Sisi launched a successful military coup.

What followed was a crackdown on the Muslim brotherhood, violence and instability, while the threat of ISIS materialized in the Sinai with bombings and attacks on military, police and civilian targets. Sisi's promise of security, stability and economic prosperity in exchange for his authoritarian rule looks more and more illusory despite the massive power and expenditure of the military.

In terms of equipment the Egyptian military is an interesting mix of older Soviet designs updated and adapted for domestic use and modern Western designs. Egypt still fields T-54s, T-55s and T-62s alongside various M60 models and the M1 Abrams. A wide range of SAM missiles from East and West are available including BUK-Ms, Hawks, SA 6, Chaparrals and older SA-2s and SA-3s. The Egyptian air force operates Mirage 2000s, F16s and the ultra-modern Dassault Rafale with Kamov KA 52s alongside many older Soviet and Western designs. The real challenge however in this most populous nation in the Arab world will be opportunity and economic growth for a nation where many earn as little as 2 dollars a day and over 75 percent of the population is under 25.



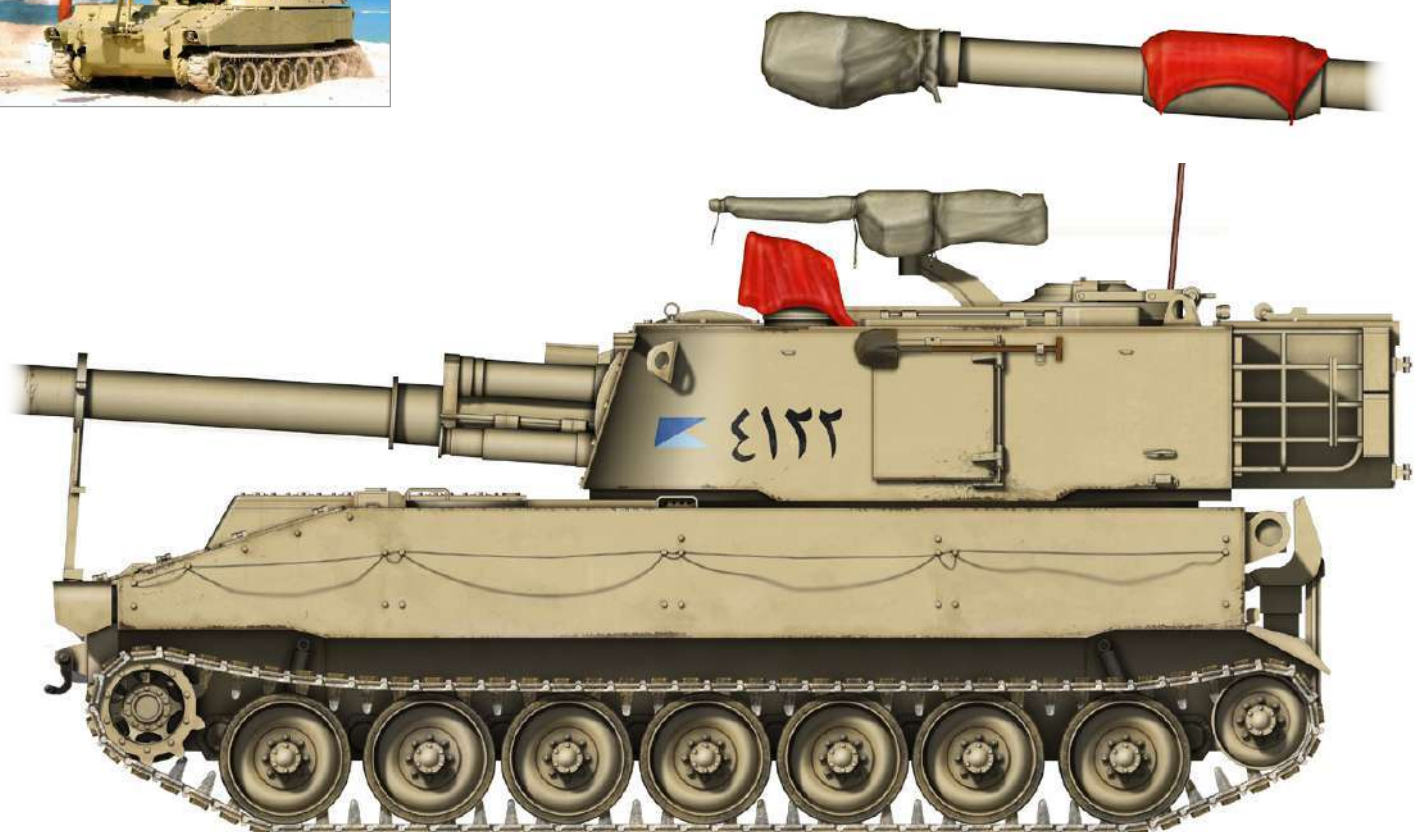
Egypt M113A2 Operation Desert Shield

This colourful M113 pictured in Saudi Arabia in 1991 is one of nearly 2500 operated by Egypt over the last thirty years, Egypt uses a number of different variants of this versatile APC one of the more interesting ideas was for a six wheel EIFV 1995 mounting a Bradley Turret which hasn't gone into mass production.



An Egyptian M109A2,

seen during Operation Bright Star in 2005 these US weapons form the bulk of Egyptian SPG's units backed up by M109/D30s and newer truck mounted SPG's.





An Egyptian army upgraded T-54 E1

Model 1951 or T-54-3 these old workhorses have been updated with a new sighting system positioned in the gunner sight and attached to the tank barrel. As seen in Aswan in 2011.



Egypt M113A2 Red Crescent

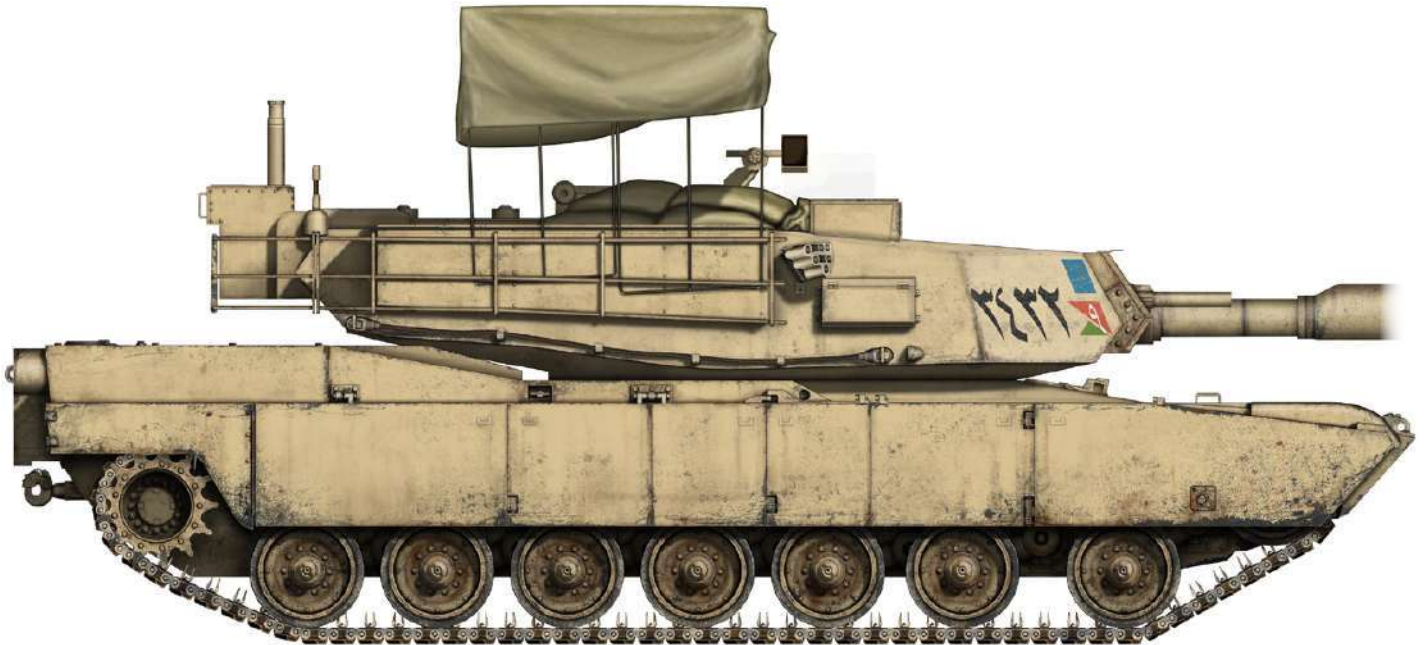
This Ambulance M113 along side M577 command variants, Fitter versions and the M901 Hammer head, more recently these have been joined by 1000 YPR-765 a Dutch Infantry Fighting Vehicle variants.





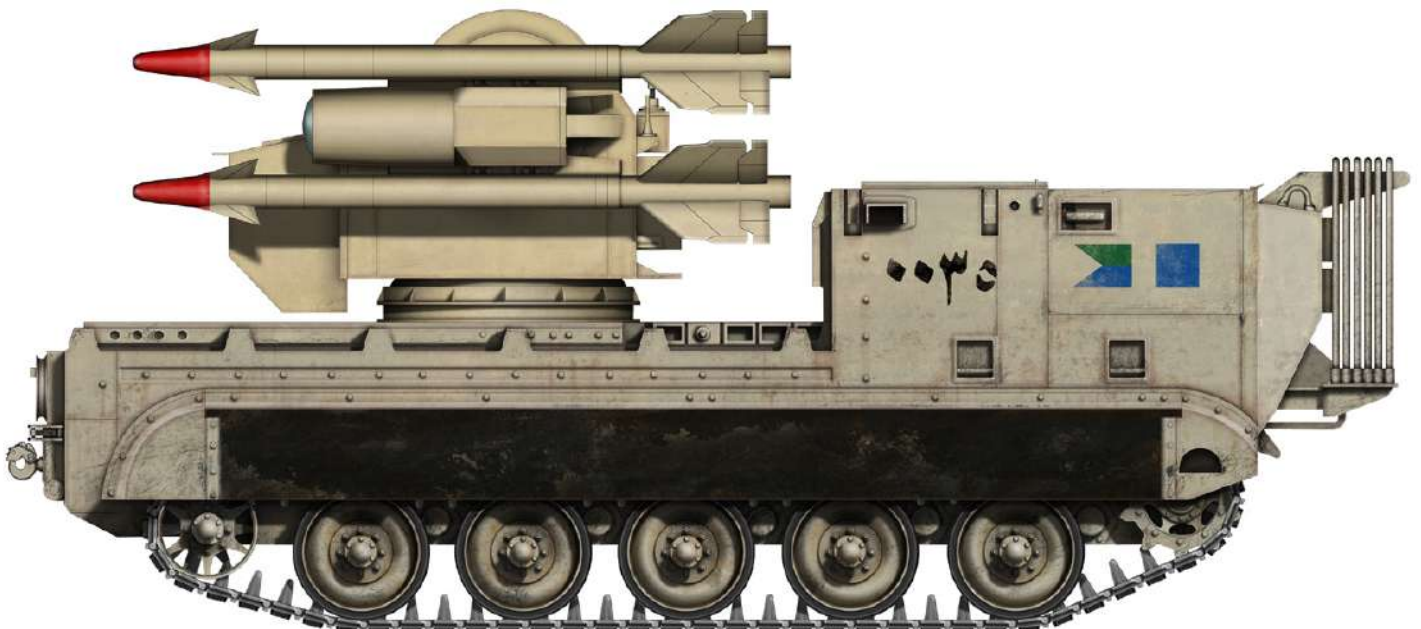
An Egyptian army M1A1 Abrams,

This tank crew has mounted a sun cover above the turret while in static position in an Egyptian town while monitoring the population. Egypt now plans to produce over 1130 of these vehicles in conjunction with General Dynamics who supply the components for Egyptian assembly.



Egypt M730 Chaparral

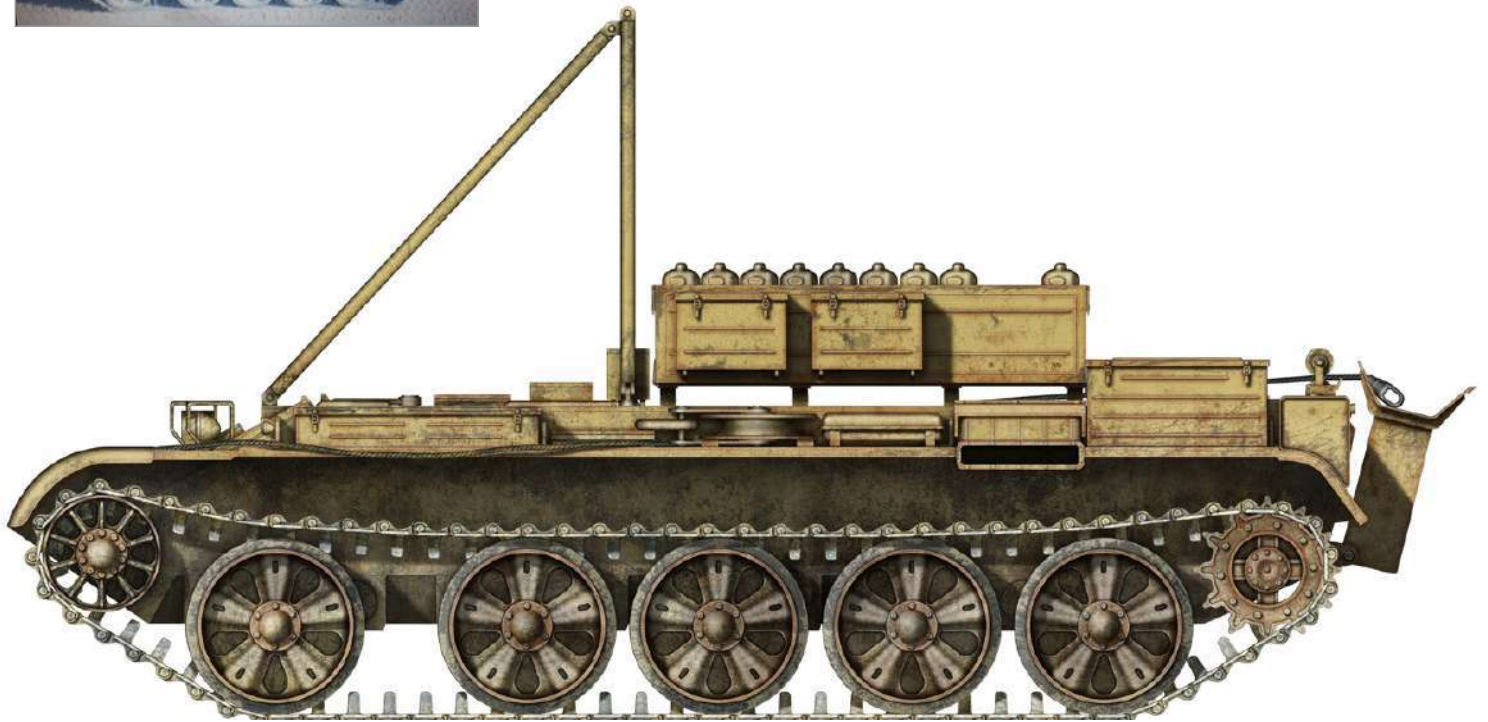
The Chaparral is a relatively elderly US Surface to Air Missile system. It has been introduced in 1969, phased out of US and Israeli service in the 1990s. The ground-launched Sidewinder did see action with the IDF in 1982, downing at least one Syrian fighter. Egyptian Chaparrals join Russian-made SA-3, SA-6 and more recently BUK-Ms.





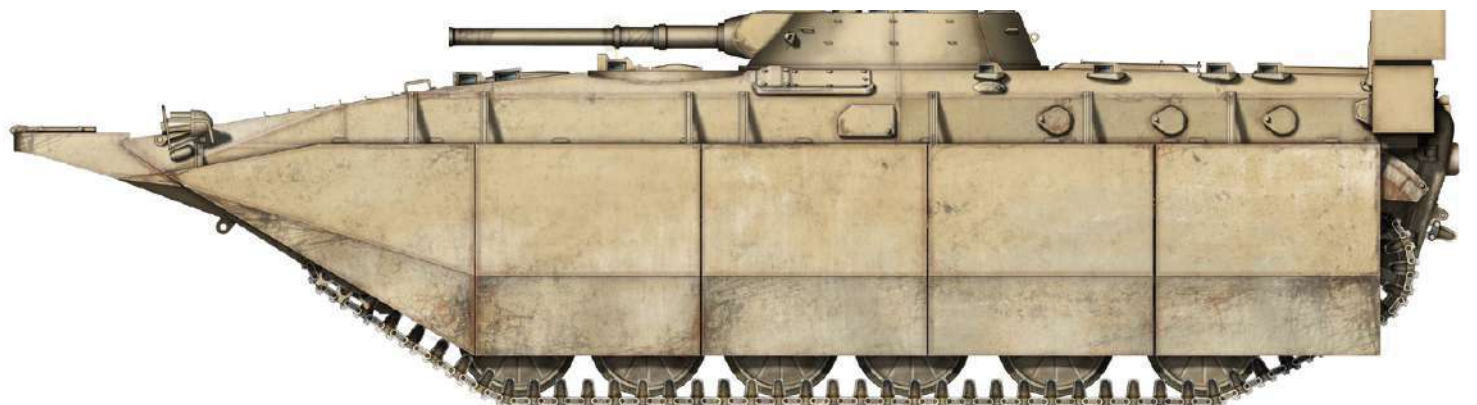
Egypt BTS-2 ARV

This basic Armoured Recovery Vehicle replaced the T-34T it consisted of a T-54 hull with a large stowage box, small folding crane and rear earth anchor, these ARVs still serve with Egyptian army units that operate updated T-54 and T-55s, while M88 and M88A2 Hercules with M60 and M1A1s.



Egypt BMP-1 with Amphibious kit

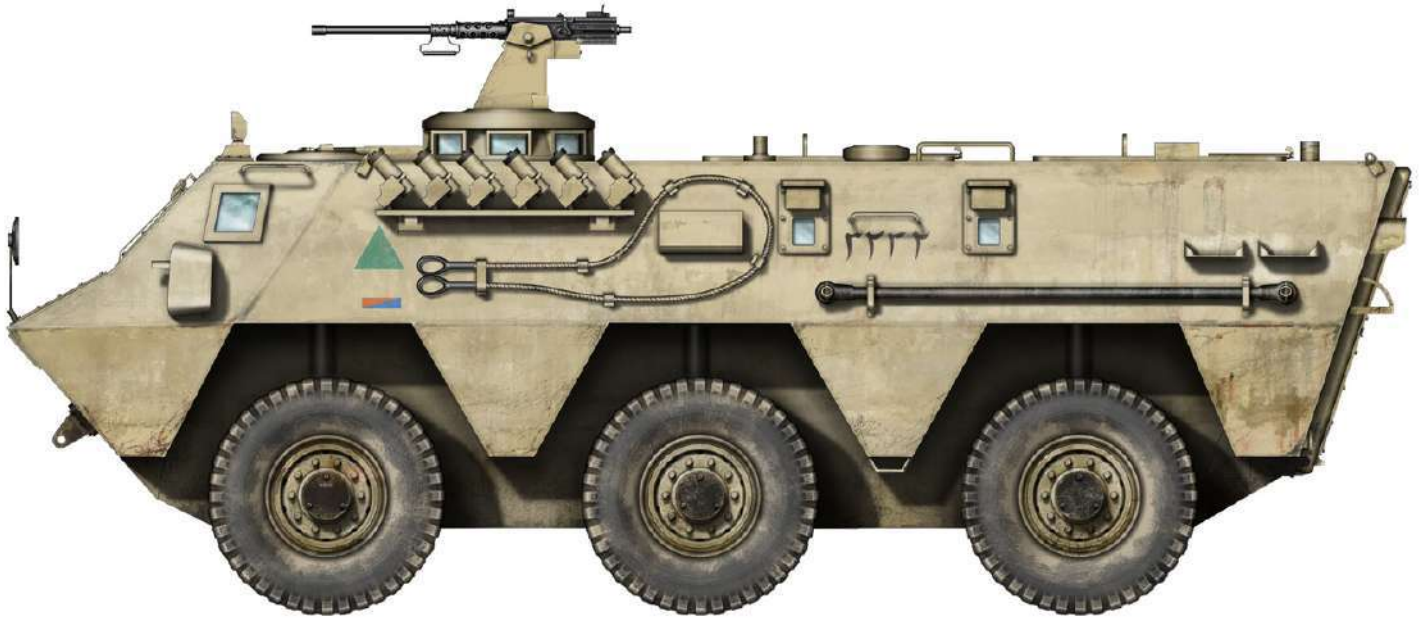
Large numbers of the BMP-1 are still available to the Egyptian armed forces, this one has a rarely seen Amphibious kit added .The BMP-1 suffers from being extremely confined for both crew and troops, while the 73 mm main gun is difficult to load and fire in action with poor visibility.





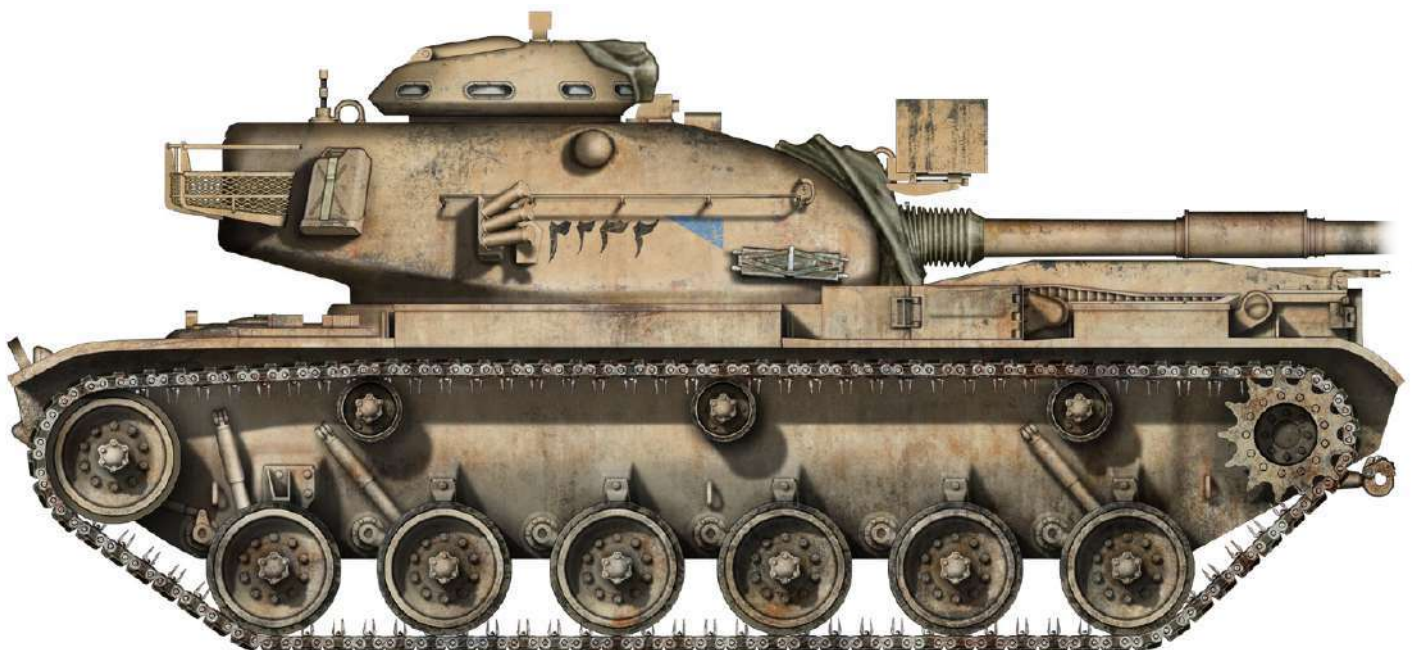
Egypt BMR-600

This Spanish produced APC is used by a number of Middle Eastern countries such as Saudi Arabia, Morocco and Egypt. Egypt purchased 260 of these handy APCs which are extremely useful in the counter insurgency campaign against ISIS in the Sinai with its large flat desert landscape.



Egypt M60A3 TTS

Egypt operates over 1700 M60A1s and M60A3s these MBTs were are very distinct improvement over earlier Soviet supplied T-54, T-55 and T-62 designs. Even with the licence production of the M1 Abrams the M60 will soldier on for many years to come, a small number have been up armoured with frontal turret sections similar to the Israeli Magach 7C and with reactive armour tiles, it remains to be seen if the whole fleet shall be updated in this manner.





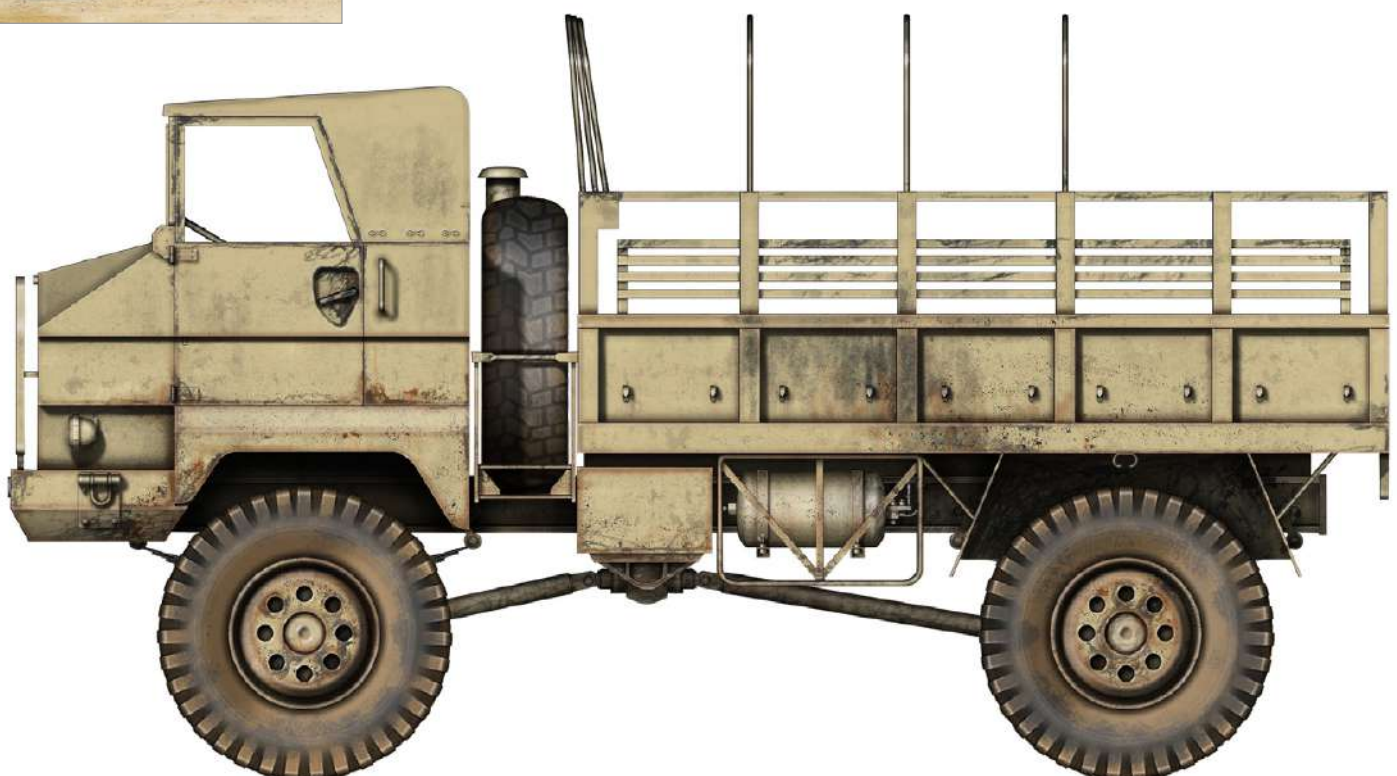
Egypt M113A2

An Egyptian M113 daubed with the feelings of a large amount of Egyptians during the revolution of June 2013. A time when nearly all types of Egyptian army vehicles took to the streets to keep the peace leading to the fall of Hosni Mubarak, election of Mohamed Morsi and subsequent army coup.



Egypt Pegaso 3046

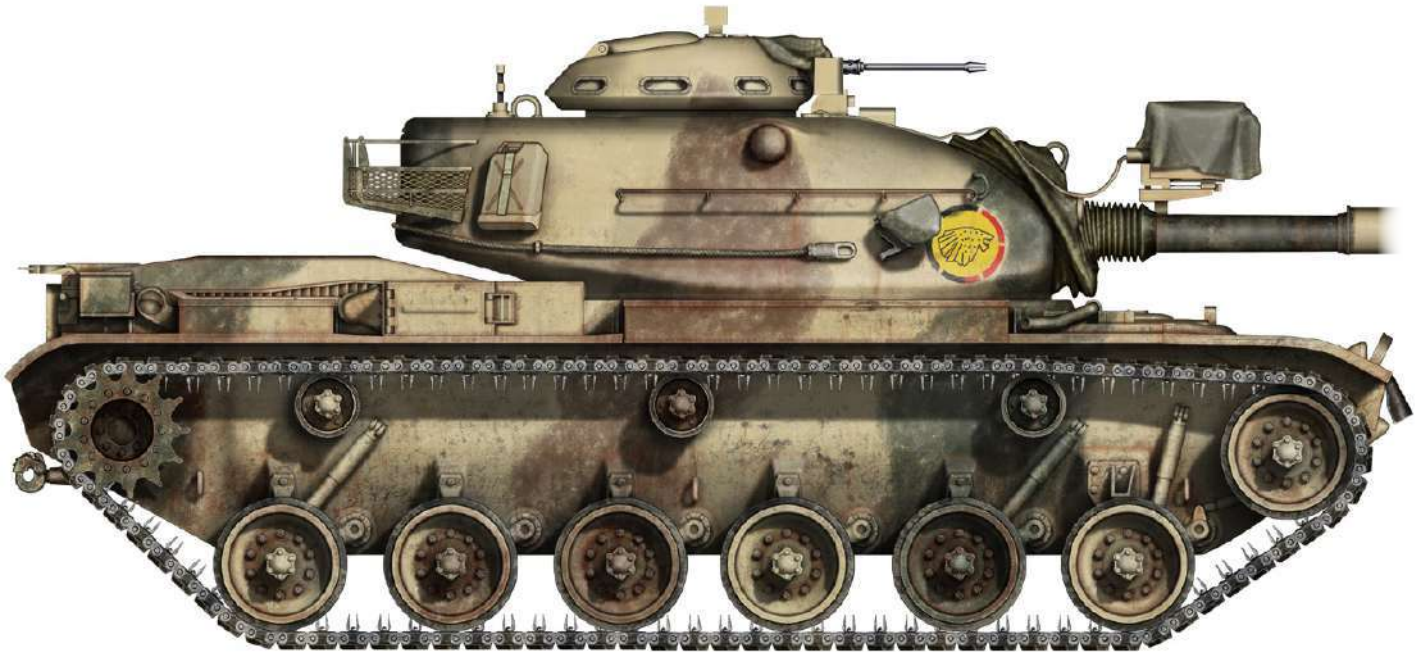
The Egyptian military are one of the largest operators of this Spanish made utility truck with over 10 000 in service. The Pegaso can carry up to 20 fully loaded troops and 5 tons on road or 3 tons off road.





Egyptian army M60A3,

as deployed to Saudi Arabia in 1990 as part of it's contingent to Operation Desert Shield, Egyptian M60's were the main stay of their armoured forces for many years participating in many Bright Star exercises and being used on the streets of Cairo when the army seized power after the removal of Mubarak.



Egypt Fahd 240/280

The indigenous Fahd series of APCs are based on the Mercedes-Benz LAP 1117/32 truck chassis with an armoured body in a simple box configuration. The Fahd comes in a number of layouts including with a BMP-2 turret aswell as recovery vehicle, Ambulance and Command vechile. The Fahd series been exported to seven other nations including Kuwait, Congo, Mali and Algeria.





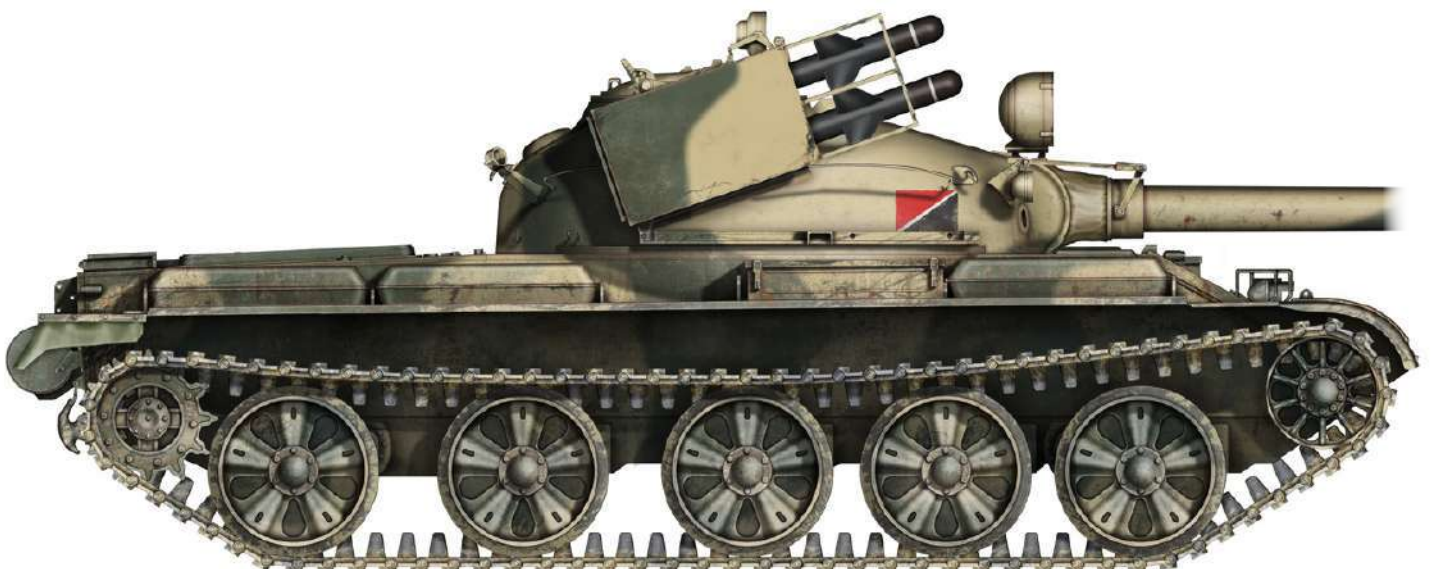
An updated Egyptian T-55E (Ramses)

this tank is one of a number updated with an L7 105mm main gun and radio communications seen operating along the canal zone with units of BTR-50's and BTS-4 ARV's in recent years



Egypt T-62

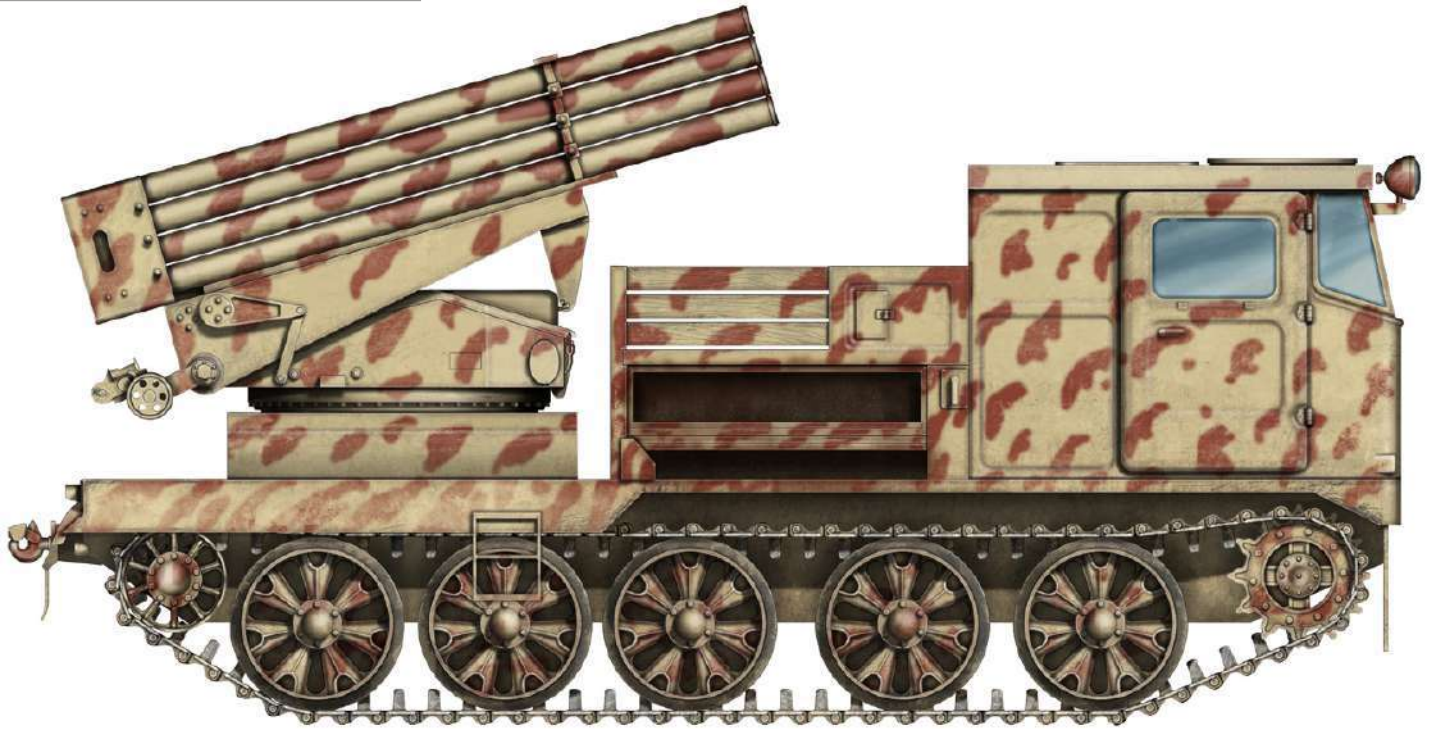
After the Yom Kippur war the Egyptian mounted two types of home produced smoke rocket systems on a number of their T-62 tank turrets. The first batch consisted of four large tube launched units per side and the second batch these rectangular boxed variants with two per side.





Egypt ATS-59G with BM-21

The Egyptian army workshops have updated and converted a large number of former Soviet supplied ATS-59G Artillery tractors to Multiple Rocket Launchers mounting their own version of the BM-21 which differs slightly in layout from the original by the fact that the launch tubes are in two distinct pods.



Egypt SPH 122mm D30

Having produced a basic Self Propelled Howitzer using a T-34/85 hull and Soviet D30 122mm after the Yom Kippur war the Egyptians saw the need for a more advanced variant. A British and an American design were both considered with the American M109 chassis mounting a simple light armoured box and locally manufactured early model D30 122mm variant won out. These SPHs have seen action shelling ISIS areas in the Sinai peninsula.



2.6

2. REGULAR ARAB ARMIES SYRIAN CIVIL WAR

Syrian Arab Army

The Syrian Arab Army has fought more than four major conflicts with the IDF and has in fact been in a state of war with Israel since 1948. In this chapter, we examine the equipment and conduct of the Syrian Arab Army during the ongoing civil war. Following its performance during the battle of Lebanon in 1982, Syria introduced a series of modest updates to their T-55 and T-62 units. Syrian T-55s already fitted with North Korean manufactured Laser range finders which saw use in 1982 alongside indigenous Syrian units were updated with rear mounted wind sensor units. While many standard T-55s remained in service or were put in storage, new models such as the T-55M and AMV were procured from Belarus and Russia. Many Syrian T-62s were also updated with side mounted retractable wind sensor units positioned on the rear left hand side of the turret beside the commander's hatch.

Throughout the 80s and early 90s the Syrian Army introduced four large batches of T-72s into service including T-72 Urals, T-72A, T-72M and T-72M1s. Of these 700 tanks, over 120 were updated between 2003 and 2006 by fitting the Italian designer Office Galileo TURMS T FCS, taking the form of a large rectangular box sight mounted in front of the commander's hatch, while others had a new Machine gun mount and gunner's sight added. The T-72A would also be upgraded to AV standard with reactive tiles, these improvements may well have been a response to the terrible performance of Iraqi T-72s against US Abrams during Operation Desert Storm. Such updates and procurements were also certainly implemented by the Syrian Army on the basis that future conflict would, with no doubt, be with their long term foe, the IDF who were themselves constantly upgrading their Magach fleet and building more and more capable and sophisticated Merkavas variants. In the end however the most deadly threat to the Assad regime came from within. In February 2011, Monawiya Syasneh and some of his fellow 7th graders inspired by the Arab Spring sprayed graffiti on their school wall "Your next doctor" in reference to the possible demise of Bashir Assad, local police from the city of Dara arrested and tortured the teens. After furious protest the nervous police released the badly bruised children to even more outrage, leading to shootings, death, insurrection and the start of a nationwide uprising. Suddenly all types of types of Syrian vehicles could be seen on news feeds and video footage coming from the ever expanding battle zones. Regime T-55s, T-62s, T-72s, and BMPs were joined by 2S1s and 2S3s as Syrian were pushed out of the country side or besieged in their bases as rebels moved closer and closer Assad's Alawite hinterland of Latakia and certain suburbs in Damascus fell into the hands of insurgents.

Meanwhile in neighbouring Iraq, the new government of Shia leader Nuri al-Maliki had been alienating the minority Sunni population. A new group calling itself the Islamic State in Iraq and the Levant [Isis] burst onto the Iraqi stage in 2013. An offshoot of Al-Qaeda, led by Abu Bakr

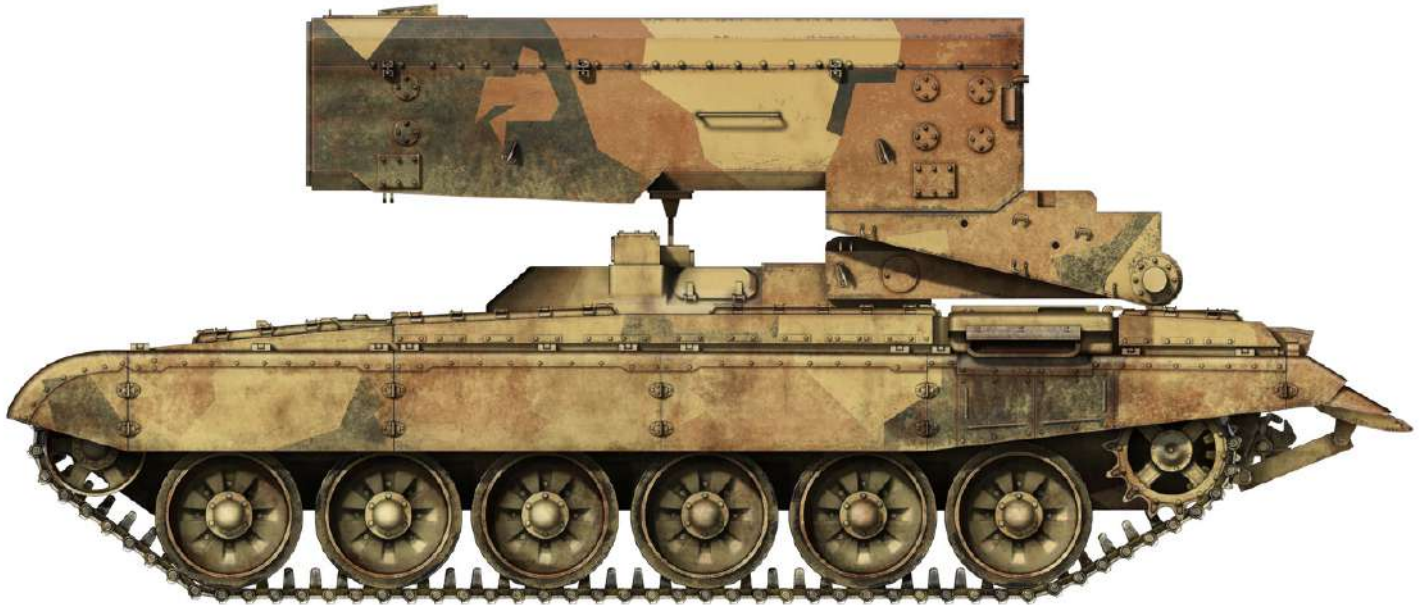
Al-Baghdadi after considerable success in Iraq Isis took the city of Raqqa in Syria in March 2013 and Fallujah in Iraq in 2014. Isis along with other Sunni jihadist groups began to dominate the struggle against Assad and his beleaguered army. Desperate to stop the steam of the rebel flow of battlefield victories, Assad turned to Russia for direct military assistance in September 2015, by this stage Isis, Al-Nursra and the Army of Conquest were in control of large areas of Syria. Russian air power, missiles and new armour were to play a major role in turning the tide in against the rebels in Syria. Soon the latest T-90 and T-90A were to be seen in action alongside T-72B3s, T-62M1s, BTR-82As, BMP-97s, BM-30s and a host of penny packet deployments such as the TOS-1, UR-77s, 2S19s and even a BMP-T Terminator, probably more for battle field testing than anything else. These vehicles had all manner of camouflage schemes and carried various marking from Russian railway numbers, Graffiti to Arabic text on Russian military police Typhoon-Ks.

The Syrian military also got assistance from Iran and Hezbollah during these perilous years in terms of financial aid but also volunteers, logistics, drones and small arms. Iran may have also helped develop a series of anti-missile boxes referred to as Sarab or Mirage in Syrian army. These units have been developed in three different models and deployed on numerous tanks, APCs and even on pickup trucks mounting AA guns. Another areas the Syrians have shown much initiative is in up-armouring their tanks and APCs with slat armour, sand bags and mesh sections particularly in the 4th armoured division and Republican guard divisions. In 2017 and 2018 images of unarmoured ZSU-23s, D9 Bull Dozers and various types of T-72s began appearing with "Shafrah" armour consisting of over lapping strips of steel plate which acts as a stronger form of stand-off armour. Colour schemes differ widely from standard Sand, Grey and Green to the Sand finish found on elite Republican Guard units. Other areas of Syrian military development has been in the area of self-propelled artillery in the form of large calibre rocket launchers mounted on altered BMP-1s, GAZ-3308s and more recently on modified T-72 chassis in the form of the Golan which launches three 500mm rockets. It is worth mentioning that various rebel units have proved particularly adept at manufacturing similar DIY MRLS. One area that the Syrian military have heavily invested in and seen very little return to date is in Surface to Air Missile defence systems. Pantsir-S1, BUK-M2E, Pechora-2M and S-200s along older systems have proved incapable of really deterring Israeli airstrikes on Syrian, Iranian and Hezbollah bases or for that matter American and allied cruise missile attacks. As Assad's forces with Russian assistance eliminate rebel enclaves through siege and bombing one thing is clear, this savage civil war is sucking in more and more regional players. While the people of Syria suffer bombardment, displacement, exile and torture at the hands of both Regime and Rebel forces as witnessed through the photos of ex-Syrian army photographer Caesar or the videos of Isis.



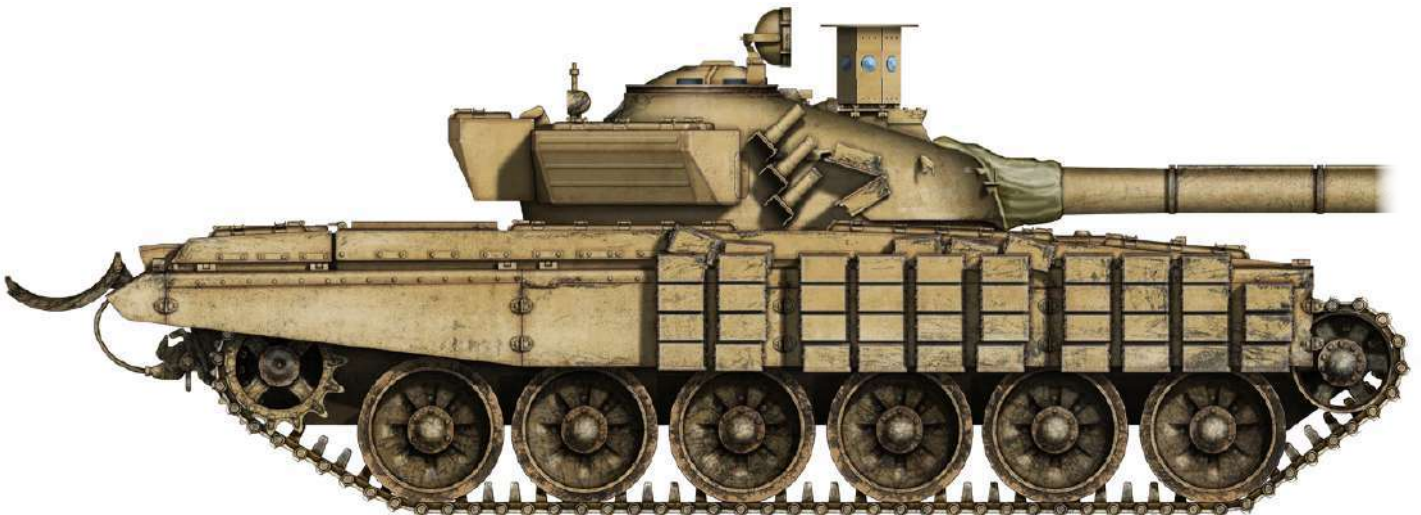
Syrian TOS-1A

This TOS-1 is one of a small number of the Thermobaric Multiple Rocket Launchers sent to Syria in the later stages of the civil war. Of note is the camouflage scheme on this vehicle as it is the exact model demonstrated at a military show in Russia before transfer to Syria. The TOS -1 has seen action in 2015 in Hama, later in the mountains around Latakia and in Palmyra against ISIS.



Syrian T-72AV with Viper Sight and Sarab 1 box.

This T-72AV fitted with NBC cladding and Explosive Reactive Armour tiles is further enhanced by the fitting of a Syrian produced Viper replacing the original Russian TPN-3-49 night vision unit. The Viper thermal sight has a range of between 1.5 and 2 kms and can even detect firearms flashes from sniper rifles. The Sarab-1 box offers good protection from early guided missiles.





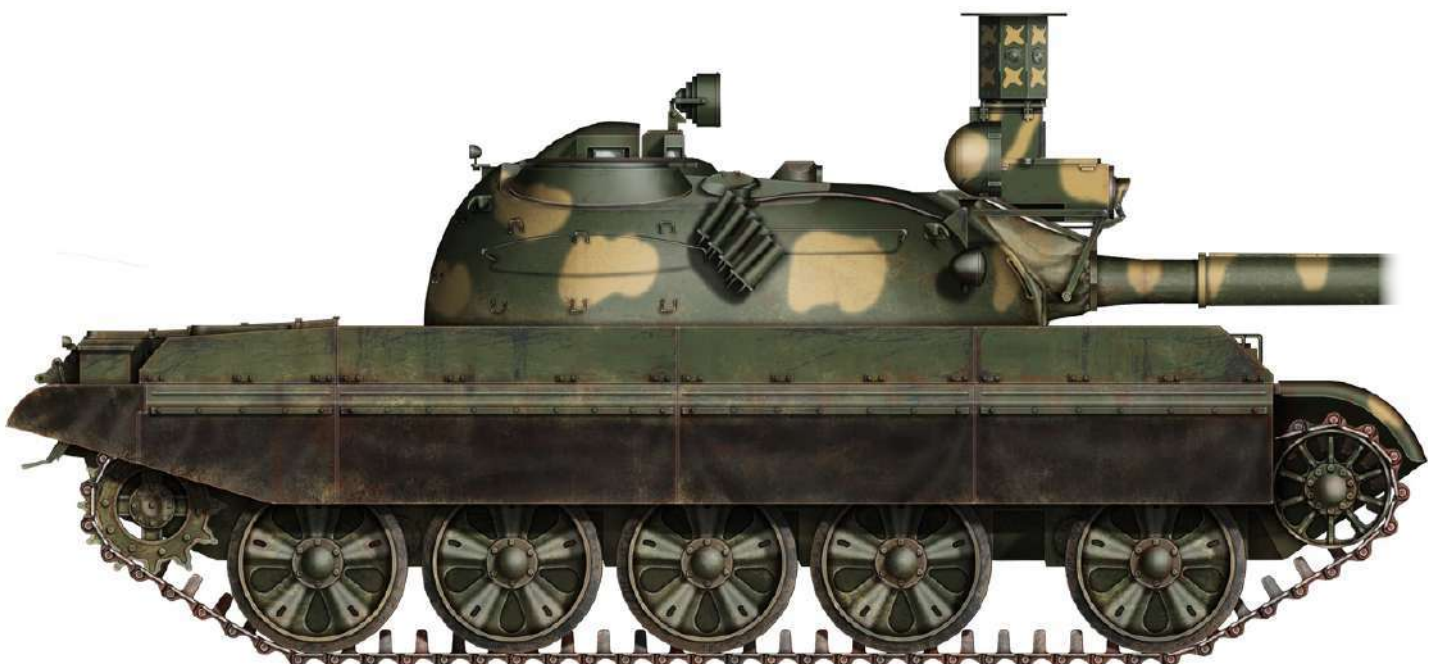
Syrian T-90A

This early model T-90 1992 model is one of the first examples of this series with a cast rather than welded turret and earlier RMSH A tracks found on the T-72 series a batch of which were supplied to Syria along side more modern T-90A models, the white numbers sprayed on the side skirts are Russian railway transport markings.



Syrian T-55 M with Thermal Camera and Sarab 1 box

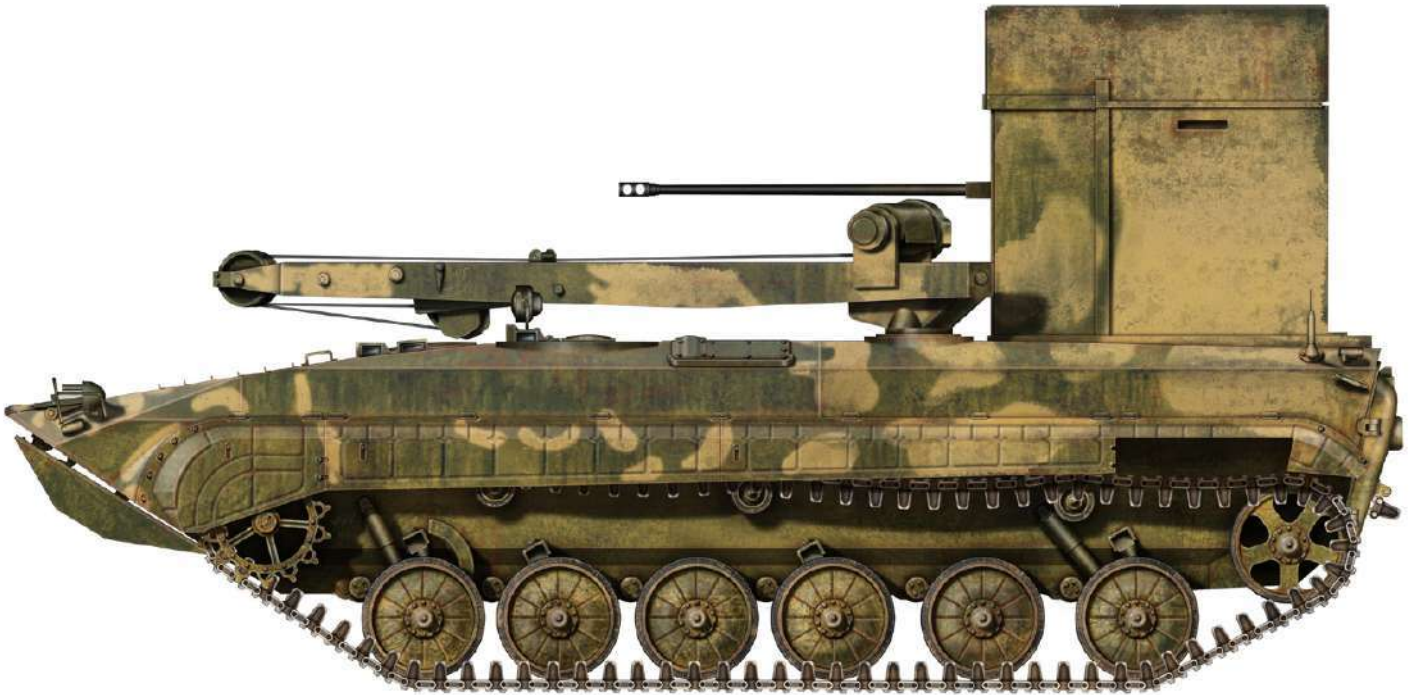
This later model T-55M which has the ability to fire the 9k116 Bastion 100mm guided missile round through the main barrel. External differences included an air filter unit instead of a second diesel fuel cell, a KDT-2 Laser Range Finder and side skirts. To add to these updates the Syrian crew has mounted a thermal image camera and Sarab 1 anti missile box.





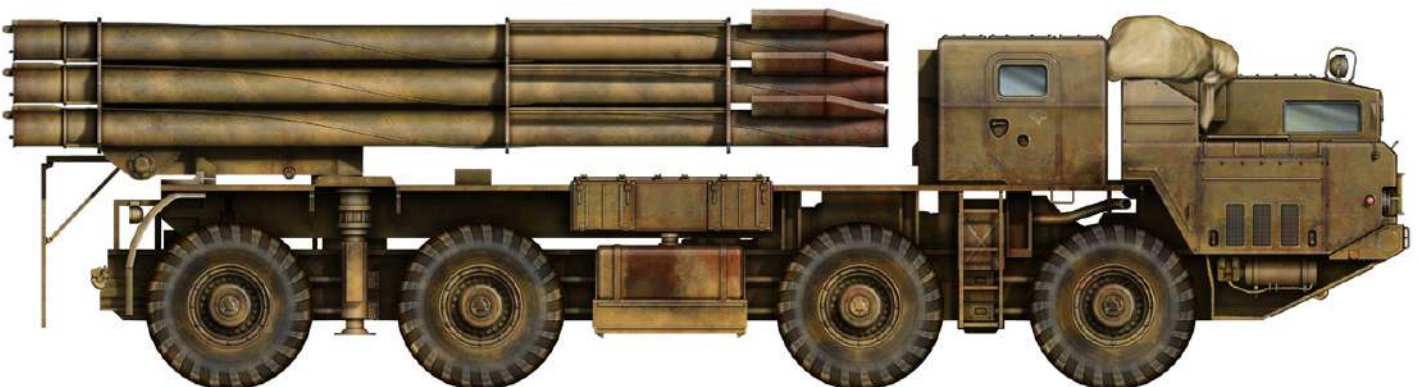
A Syrian army BREM-2

armoured recovery vehicle with a 61-K 37mm anti-aircraft gun mounted in a home-made armoured box where stowage container is normally positioned.



Syrian BM-30 Smerch

The BM-30 Smerch comes in a number of variants the Syrian military are thought to use the 9A52 variant with Maz -79111 truck chassis. This massive MRLS has a range of 90 kms and fire a wide range of 300mm rockets with various types of warheads including Cluster munitions, Thermobaric and guided anti tank. The BM-30 has seen action in Syria since 2015 and also in Donetsk and Lugansk with Ukrainian and Russian forces.





Syrian T-72 BREM 1 ARV

This T-72 based ARV represents a big improvement in Armoured Recovery Operation capacity for the Syrian military over their earlier VT-55 and BTS-4 ARVs from the 1970s. The Brem 1 has seen much use with units such as the Republican Guard (usually sand camo) and 4th Armoured Division recovering numerous damaged vehicles. A number of Brem ARVs have been seen with considerable damage to top stowage bins and minus their dozer blades indicating the nature of the ir frontline service.



Syrian SA-6 Gainful

This 1970s vintage Surface to Air Missile defense system is still effective in the right hands and in the right conditions. It is outdated however compared to more recent purchases such as the BUK M2, Pantsir S1 and S-200 which have only managed to bring down one Israeli F-16 in a concerted SAM operation in 2018 after numerous incursions and unpublished attacks on Syrian, Iranian and Hezbollah units in Syria during the course of the Civil war.





Syrian Arab Army 2S1 Gvozdika

Large numbers of the 2S1 122mm SPG were available to Syrian forces at the start of the Civil war. Rebel factions such as the FSA and ISIS managed to capture numbers of these handy self propelled guns from over run bases. The 2S1 replaced the indigenous T34/D30 in Syrian service offering better crew protection and speed being based on a stretched MT-LB chassis.



Syrian 2S3

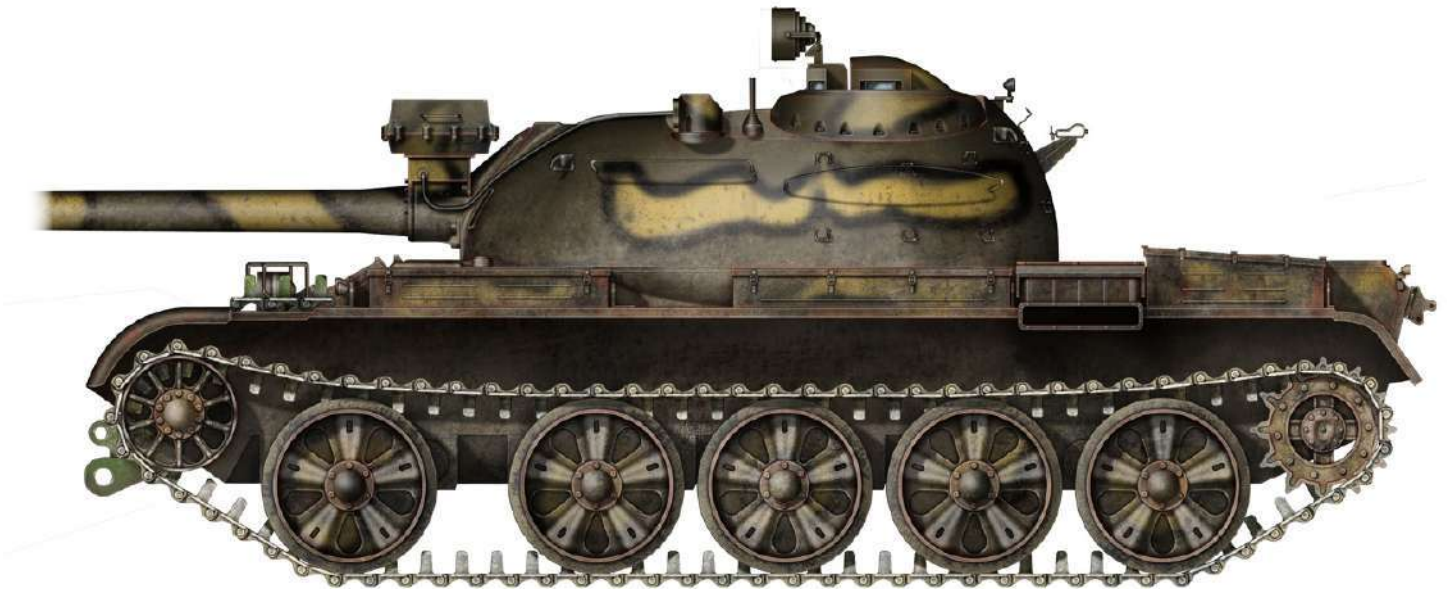
The 2S3 Self Propelled Gun is widely used by Syrian army regular units and Republican guard units. The Akatsiya entered service in the USSR in 1971 and was exported widely through out the globe, the 152mm gun has seen action in the direct fire role in urban areas but also long range firing where it's 18.5 km range is acceptable given the rebels shortage of suitable counter battery fire power.





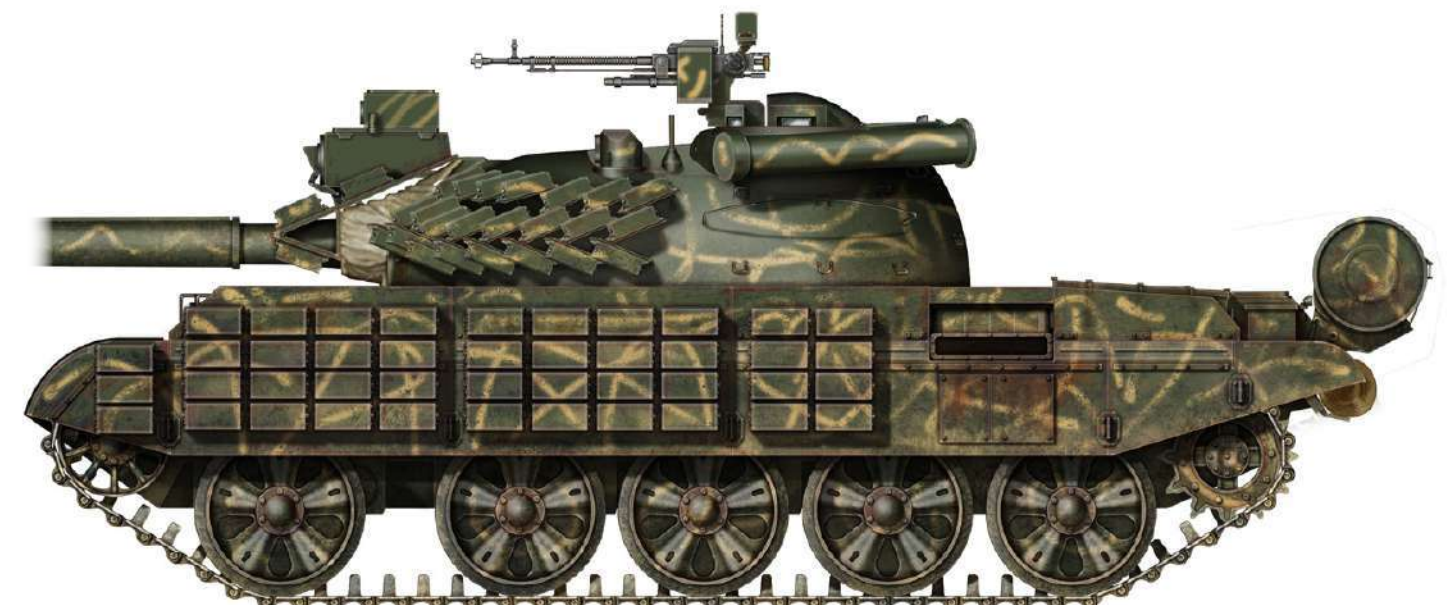
Syrian T-55 MOD.1963 with North Korean Laser Range Finder

Large numbers of T-55s still serve in the Syrian army and with Pro Assad Militias. Many early models such as this variant which served during the Yom Kippure war have been updated with LRFs and saw use in 1982 and later were further updated with Sarab boxes and Viper thermal sights. This variant is seen early in the Civil war before modern ATGMs were sent to rebel groups.



Syrian T-55 AMV

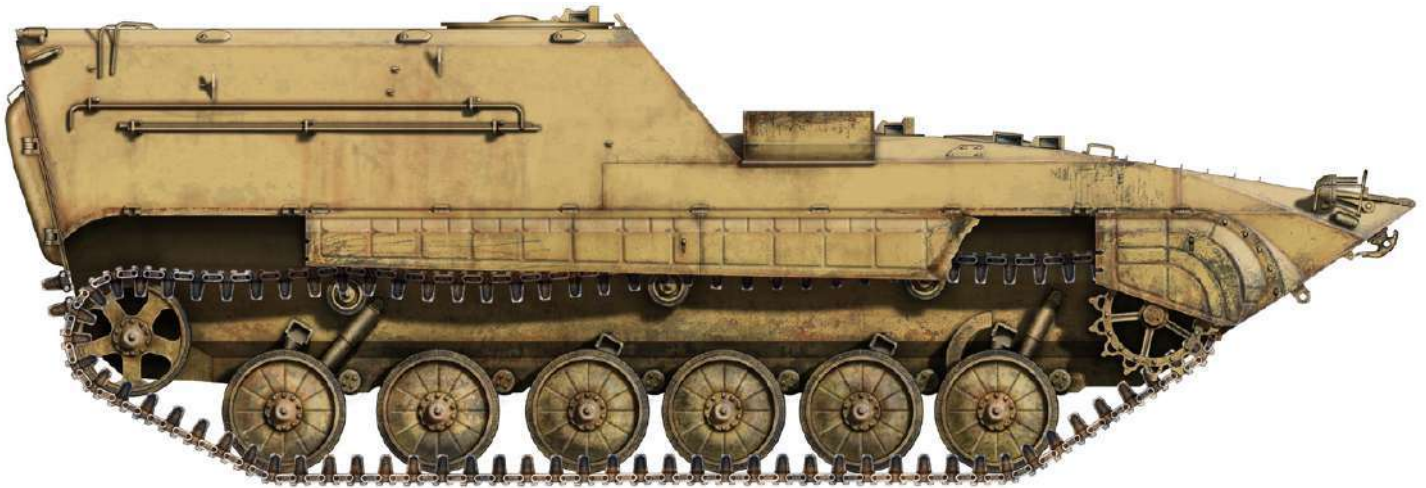
The T-55 AMV is in many ways the ultimate Syrian T-55, based on the T-55A, it has improved optics and a laser range finder for firing the 9K116 Bastion ATGM round (M) and Kontakt-1 ERA tiles (V). To top this off the Syrians have mounted a Thermal image camera above the KDT-2 LRF.





Syrian BVP-1 AMB-S ambulance and command vehicle

The Czechoslovakian state license produced 18,000 BMP-1s over the years, including a large number of simple AMBS variants these versions of the BMP-1 did away with the gun turret and raised the roof allowing for ambulance and command variants. First spotted in service in Lebanon the Syrian Arab Army use many of these variants as battle taxis as they allow more head room and space for combat units than the highly restricted BMP-1 rear infantry section.



Syrian BRDM with ZU-23-2

A number of Syrian army BRDM-2 reconnaissance vehicles have been seen in the latter stages of the civil war with Slat armour and turret updates. The Syrians fitted ZSU-23mmx2 as seen here with an improved sighting system, as well as others with enlarged gun turrets or open topped AGS-17 grenade launchers and sun covers above. These and other updates display a marked determination to recycle and improve older equipment to make it relevant to the current fighting against well armed insurgents





Syrian SS-21 Scarab 9M79 Tochka

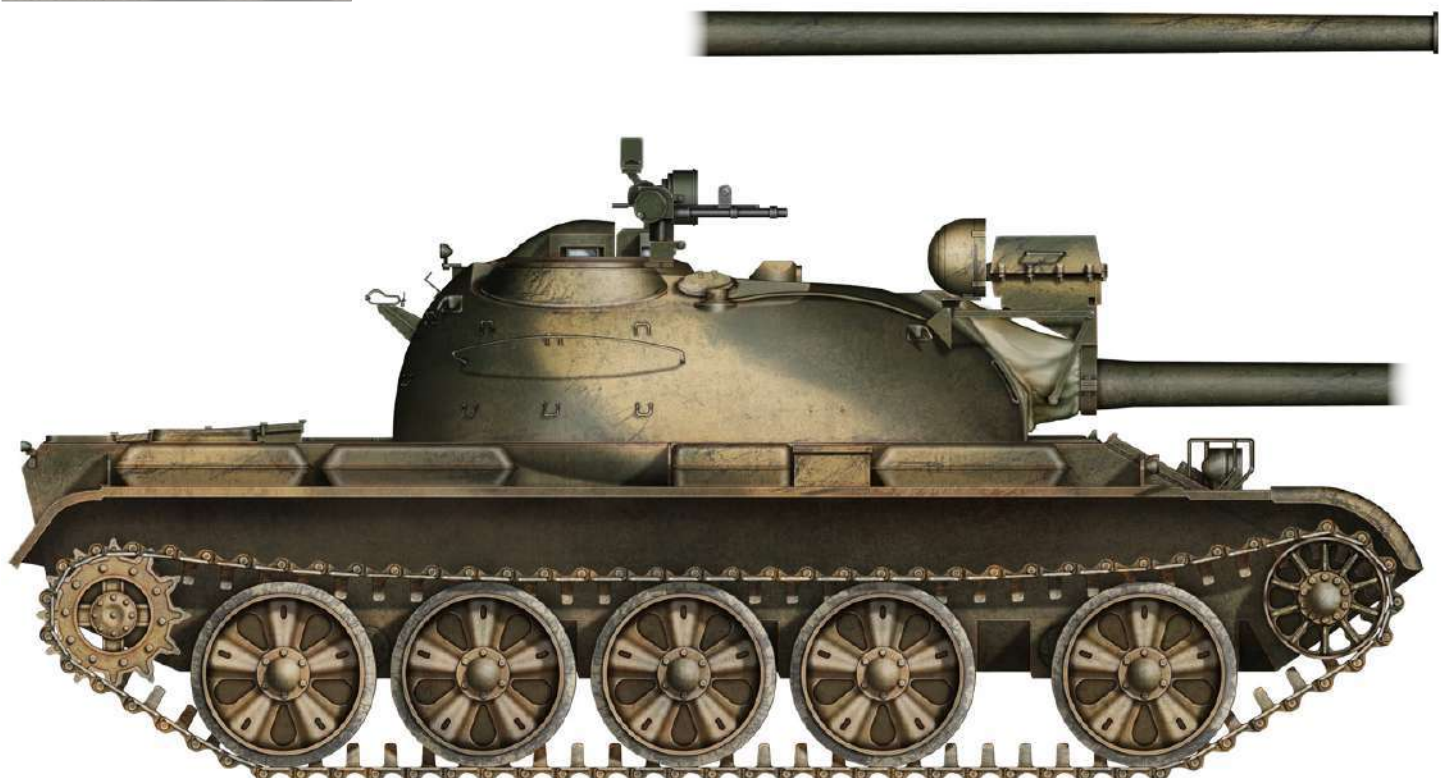
This mobile missile system is a considerable improvement over the earlier Frog-7 or Luna-M deployed by the Syrian army. The Tochka is a much more accurate missile while being some what smaller and easier to handle. The Tochka began to see action around 2016 when these weapons were fired at the civil defense centre in Aleppo, at Jihadist groups in Eastern Ghouta where they were witnessed in transport with Smerch during offensives in this sensitive area for the Assad regime.



Syrian Arab Army T-55 with North Korean Laser range finder

This late model Russian built T-55 model 1970 features a T-62 style loader's hatch.

It is interesting as it features a North Korean LRF but also has been fitted with an early model D-10T 100mm tank gun, indicating Syrian armourers use what ever is at hand in the repair depot .





Syrian 2S1 Gvozdika

Replacing the indigenous T34/D30 SPG in Syrian service the 2S1 was a serious improvement in mobility and crew protection while sharing the same calibre 122mm gun as the D30. The 2S1 SPG is based on an MTLB chassis with an extra road wheel added, is fully amphibious and NBC protected. These SPGs have seen extensive use in urban fighting throughout the Civil war with a number falling into the hands of various rebel factions where their rugged simplicity is appreciated.



Syrian Arab Army T-55

This Syrian T-55 has been updated with a Syrian produced Laser Range Finder unit. Syrian T-55s can be seen with at least three different LRF units, including Russian and North Korean. First witnessed in 1982 in Beirut, these T-55 had wind sensor units added in the late eighties, this vehicle has extra stand off armour added to the turret in the form of empty 100mm tank shell casings.





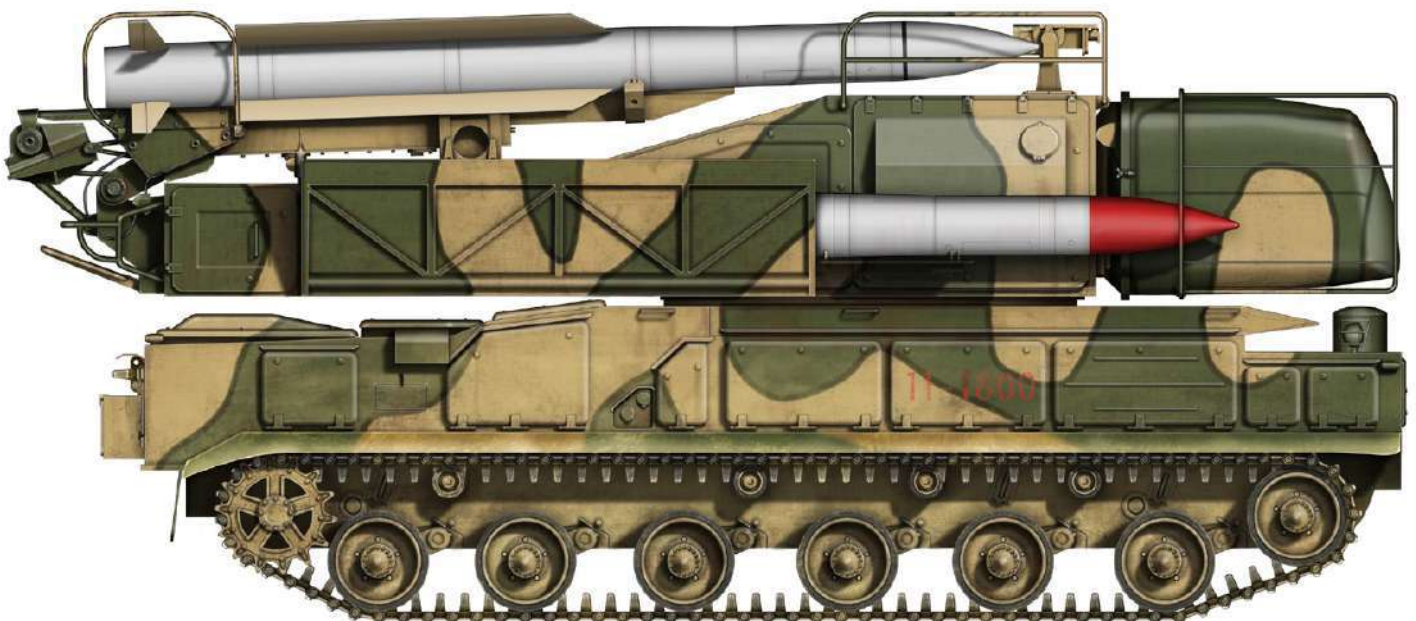
Syrian Police force BRDM-2

Syrian forces have operated the BRDM-2 in large numbers since the Yom Kippur war. According to former Soviet soldiers the BRDM is rather under powered and lacks proper protection or fire power for the modern battlefield. That said the BRDM-2 has been a major export success, this Syrian Police variant wears an interesting blue camouflage scheme similar to Iraqi police vehicles. The extra armour plating around the wheel wells offers better protection from small arms fire.



Syrian BUK-M2

The BUK-M system is now infamous for the downing Boeing 777-200ER Malaysia Airlines Flight 77 in July 2014. In Syrian service the BUK -M was used in April 2018 when American, British and French forces launched multiple cruise missile attacks on Chemical weapon sites in Syria. Russia claimed that 29 BUK-M2Es hit 24 incoming missiles, claims denied by US DoD. In May of that year the Israeli Air Force claimed to have destroyed a BUK system during operation House of cards.





Syrian Army T-55

This Czechoslovakian produced T-55 with North Korean Laser finder is typical of a number of these conversions used by the Syrian Army since the battle of Lebanon in 1982. More recently Syrian units have mounted Sarab 1 anti-missile boxes on the turret and in some cases above the LRF to offer better protection against rebel ATGMs.



Former Syrian Army T-62 Model 1972

This T-62 variant could easily be a survivor of the massive tank battles on the Golan Heights of 1973. The yellow sand and dark green camouflage is a more recent addition as is the retracted wind sensor unit mounted on left hand side rear of the turret.





Syrian T-72 Ural

A Syrian T-72 Ural variant, these early model T-72s with GIII armour were alleged used in action for first time just before the cease-fire ending the 1982 battles outside Sultan Yakoub where a number of vehicles belonging to the 82nd armoured division were knocked out by Israeli Tow missiles, with no photographic evidence observers would have to wait nearly thirty years before seeing hundreds of these early Ural variants in action in the current Syrian civil war.



Syrian T-62M

Russia delivered a substantial amount of T-62M and T-62M1s to the Syrian 11th armoured division in 2015. These tanks, some with the anti-radiation cladding, had been developed to fight /to survive a limited Nuclear war in Europe and had been deployed to East Germany in the mid eighties. Later these tanks were to see action in Afghanistan, some seeing service with the Taliban, Soviet variants were put into storage after the conflict only to be sent to Syria in batches, a recent delivery being made on September 2018 with ERA armour clad T-62MVs included.





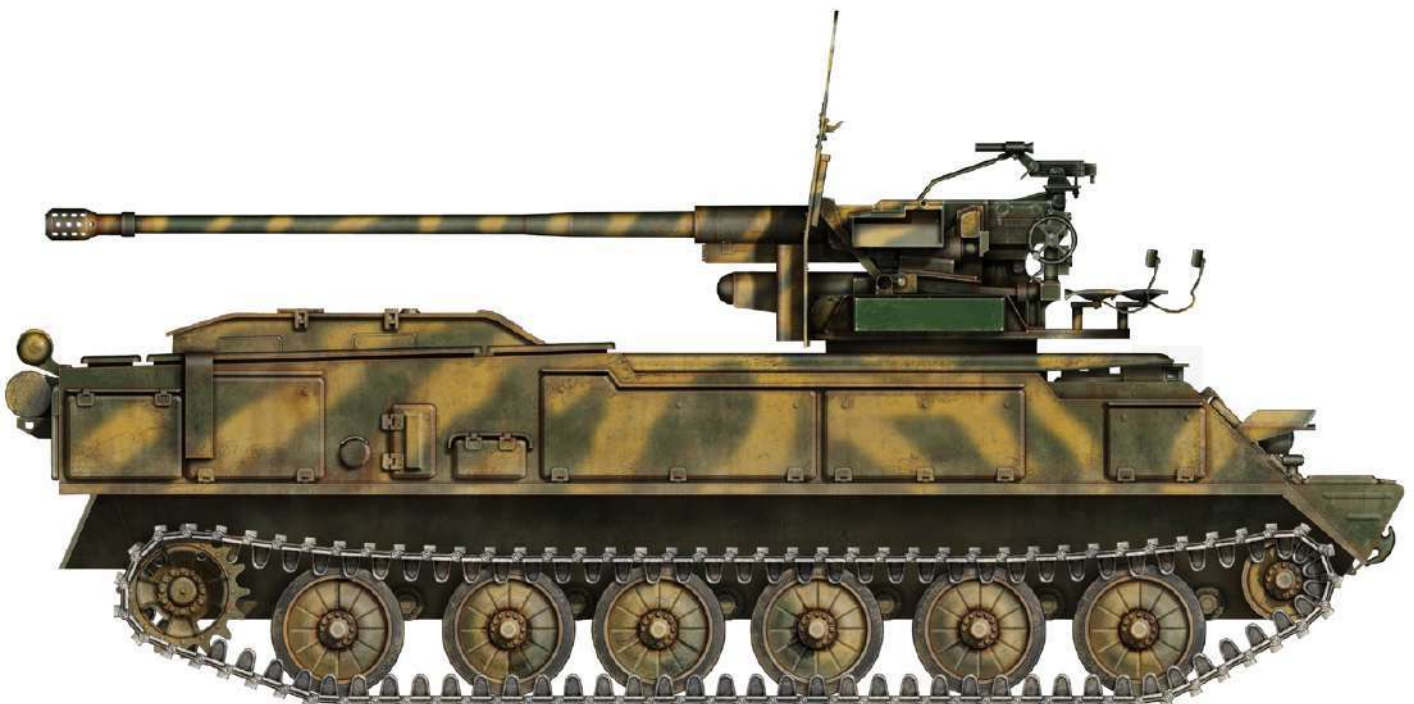
Syrian Arab Army T-72M TURMS-T with Sarab 1

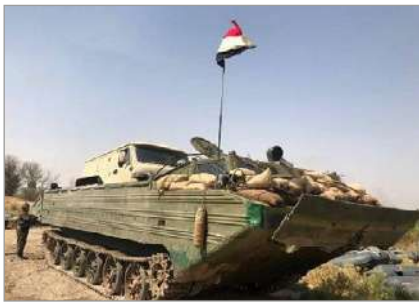
This Syrian T-72 is one of a batch of T-72 variants including early Ural, T-72M and T-72AVs that were updated with the Italian produced SELEX GALILEO TURMS-T system. A number of these vehicles also received the automated machine gun loader's hatch and sights not present on this vehicle. In place of it is a Sarab 1 anti-missile box.



Syrian SA-6 Kub chassis / AZP S-60

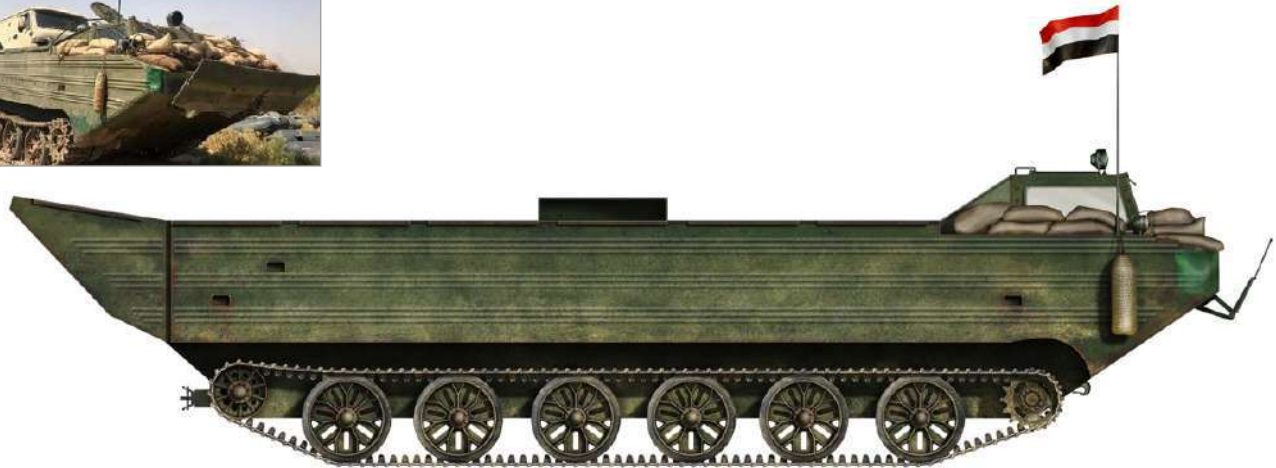
A small number of former Syrian air defence SA-6 Gainful Tel launcher chassis were converted during the civil war to ground attack gun mounts. Such chassis have also been used similar roles in Iraq, the light tracked vehicle is a handy run around on which to mount such heavy AA guns and the SA-6 Gainful is a fairly outdated system at this stage.





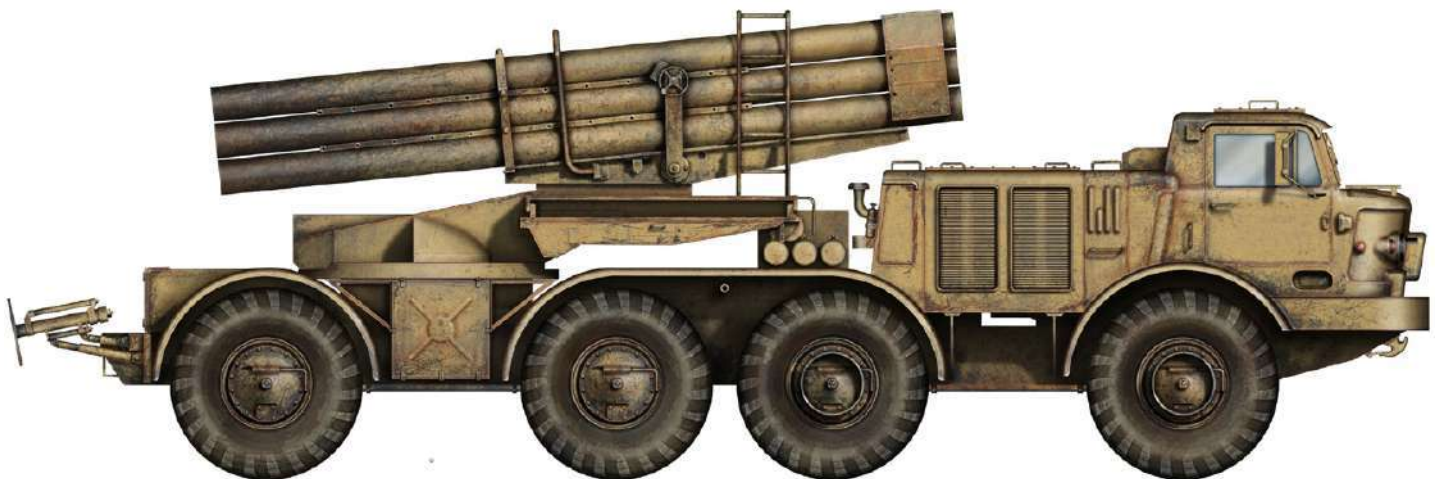
Syrian Arab Army PTS-2 Amphibious vehicle

Seen during Syrian Arab Army operations to cross the Euphrates in 2017. The PTS-2 was joined by pontoon bridges delivered by Kraz-225B, after retaking Delr-Ez-Zor Syrian forces attacked ISIL and Syrian Democratic Forces in this area.



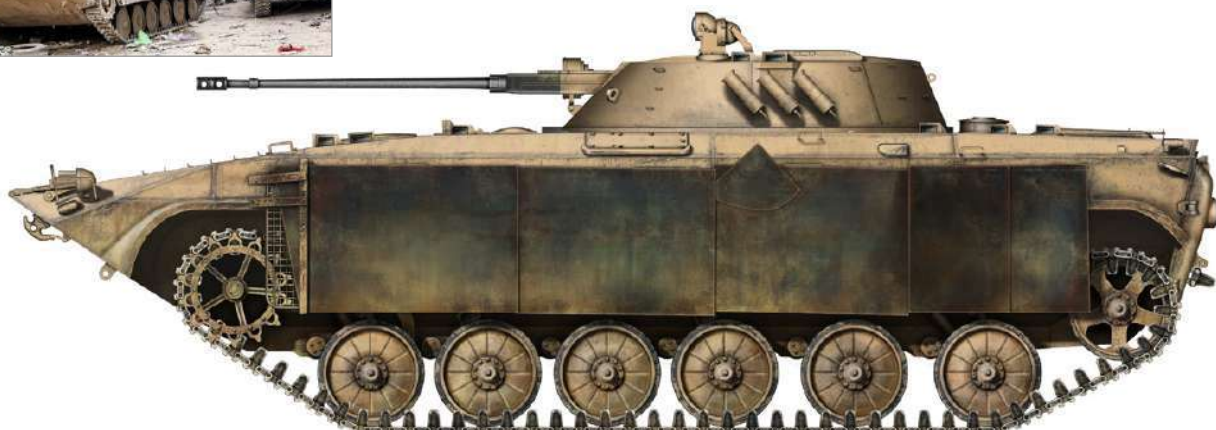
Syrian Arab Army BM-27 Uragan

This 220mm MRLS like the larger BM-30 Smerch has seen active service in Syria and in the Ukrainian conflict in Don bass in recent times. With an effective range of 35kms the Uragan can fire a choice of warheads and has proved devastating in built up areas.



Syrian Republican Guard BMP-2

This uparmoured Republican Guard BMP-2 is seen in 2013, part of a mixed battle group of T-72 AVs, AMB-Ss, and Brem-1s. Side skirt armour of rubber sheeting, Concrete or metal mesh have been used on Syrian BMP-2s to add extra protection from RPGs to the vulnerable sides sections of the vehicles.





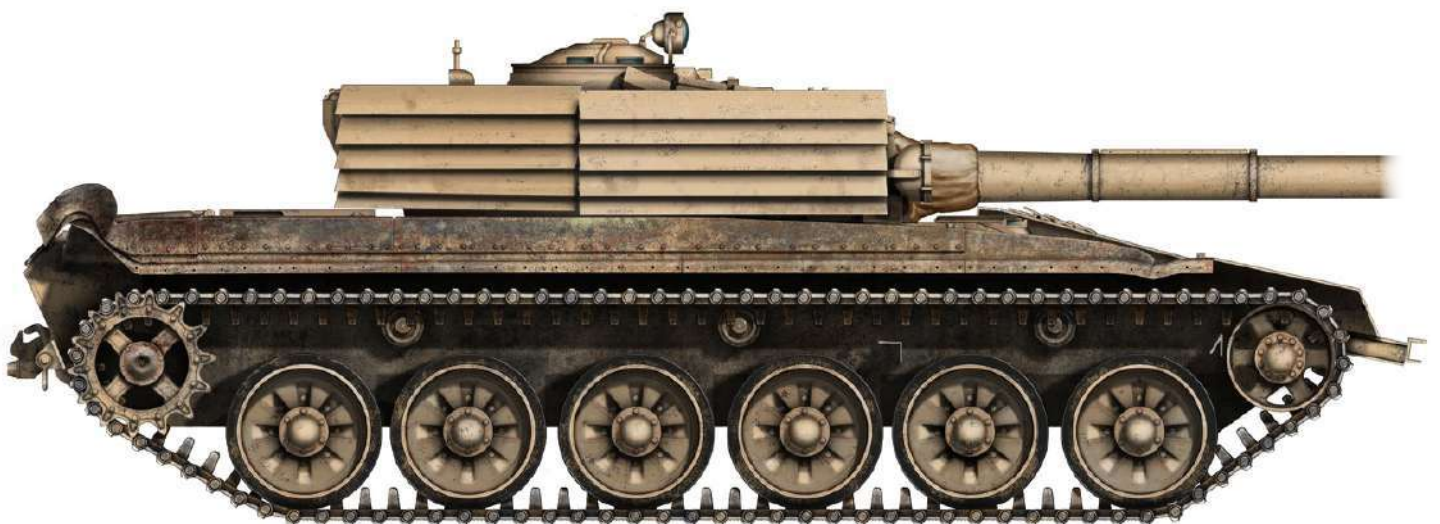
Syrian Arab Army BPM-97 Vystrel

This Kamaz designed Russian MRAP has been deployed in a number of versions to Syria. Russian forces use variants with various electronics while standard variants with various turret armament layouts are used by Syria forces. A number of Syrian variants have side stowage lockers and rear turret stowage bins added to the side and front of the BPM-97.



Syrian Arab Army T-72 Shafrah

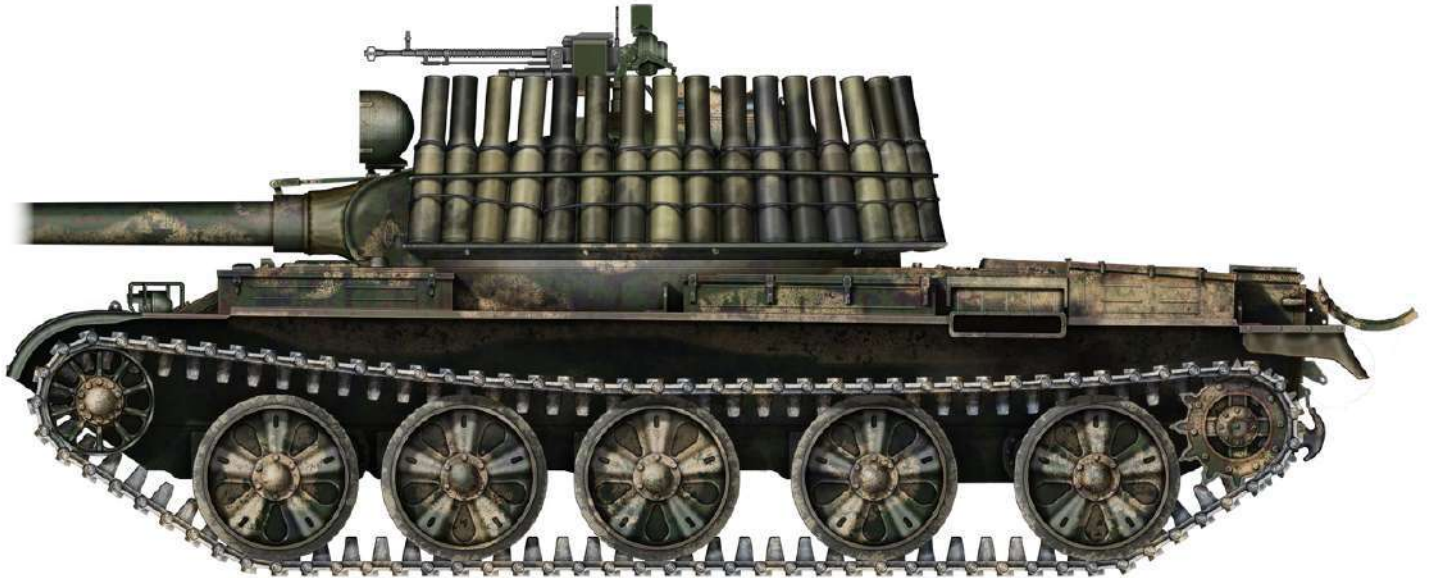
Towards the end of Syrian Civil War, units such as the 4th Division applied Shafrah overlapping armour plate to many of their vehicles. This overlapping armour plating has been seen on ZSU-23mm x 4 Shilkas, D9 bulldozers and a range of T-72 variants. This anti missile defence system has evolved since earlier bird cage and concrete and traditional bar armour screens.





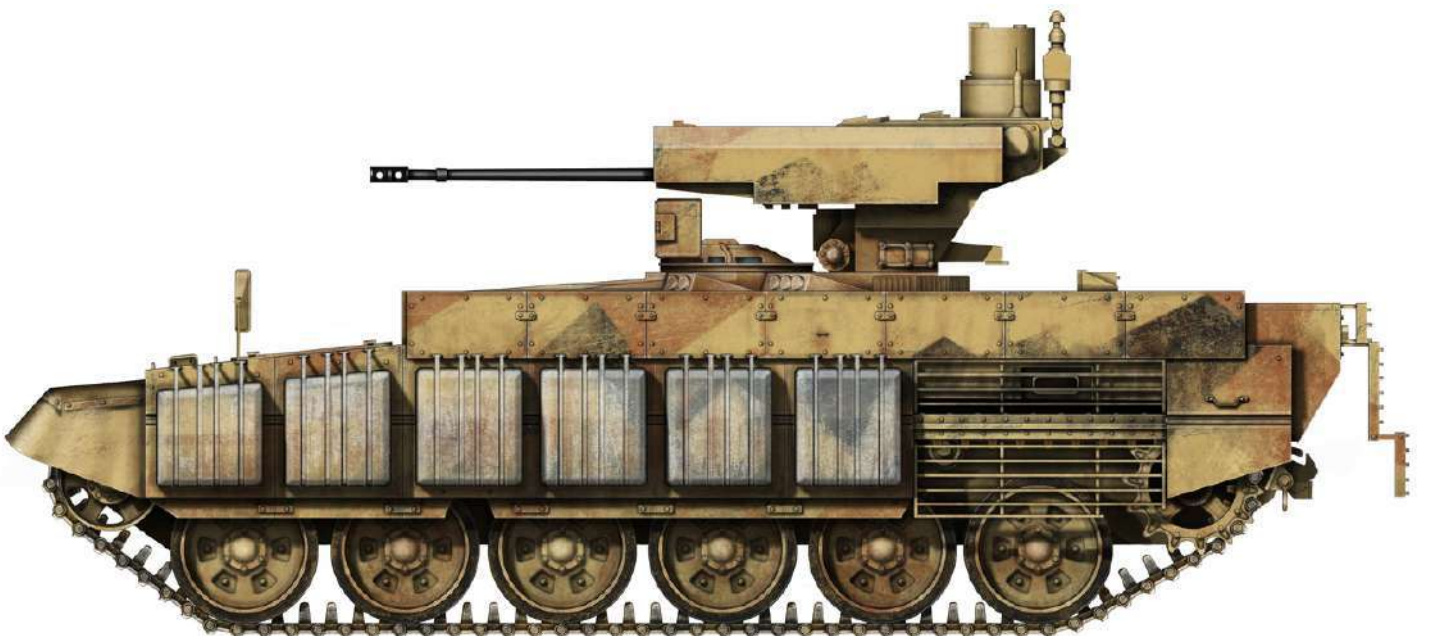
Syrian Arab Army T-62 model 1972

This Syrian army T-62 has had the simple addition of empty 115mm ammunition cases added around its turret. Similar type of shell case arrangements have been seen on rebel and government forces T-55s sometimes filled with sand or stones.



Syrian Arab Army BMPT-72 Terminator 2

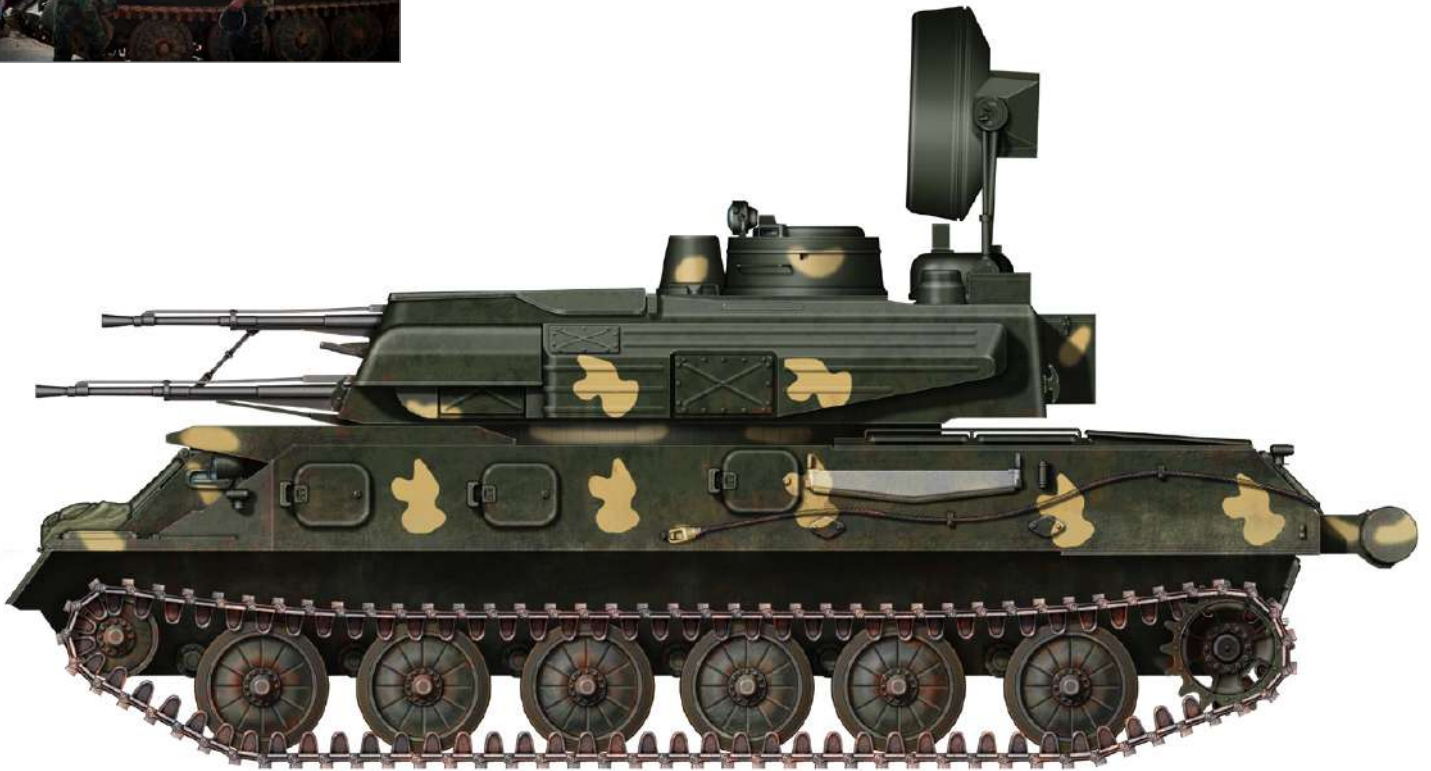
The Terminator was first seen displayed in Khmeimim air base during a visit by president Assad in June 2017, along side various Russian weapons deployed to Syria. This single example of this powerfully armed armour protection vehicle is a hybrid using an earlier Terminator with later missile pods. The bags hanging on the sides of the vehicle are said to contain a new sort of ERA armour. The BMPT is currently deployed with the elite Syrian unit the Desert Falcons.





Syrian Arab Army ZSU-23-4 Shilka

This Syrian army Shilka wears a fairly traditional Syrian army camouflage pattern of sand blotches over green. In the later years of the Civil war Shilkas have been spotted with Sarab 1 anti-missile boxes, including at least one with a Syrian Hezbollah unit operating in Iraq with a Sarab 2 mounted on it's roof.



Syrian Arab Army AMB-S with ZSU-23mm AA gun

This Czechoslovakian AMB-S has been up gunned with a ZSU-23mm AA gun, with a sturdy gun mount and protective gun shield. These large boxy APCs are a distinct improvement over the original BMP-1 in terms of crew operating space.





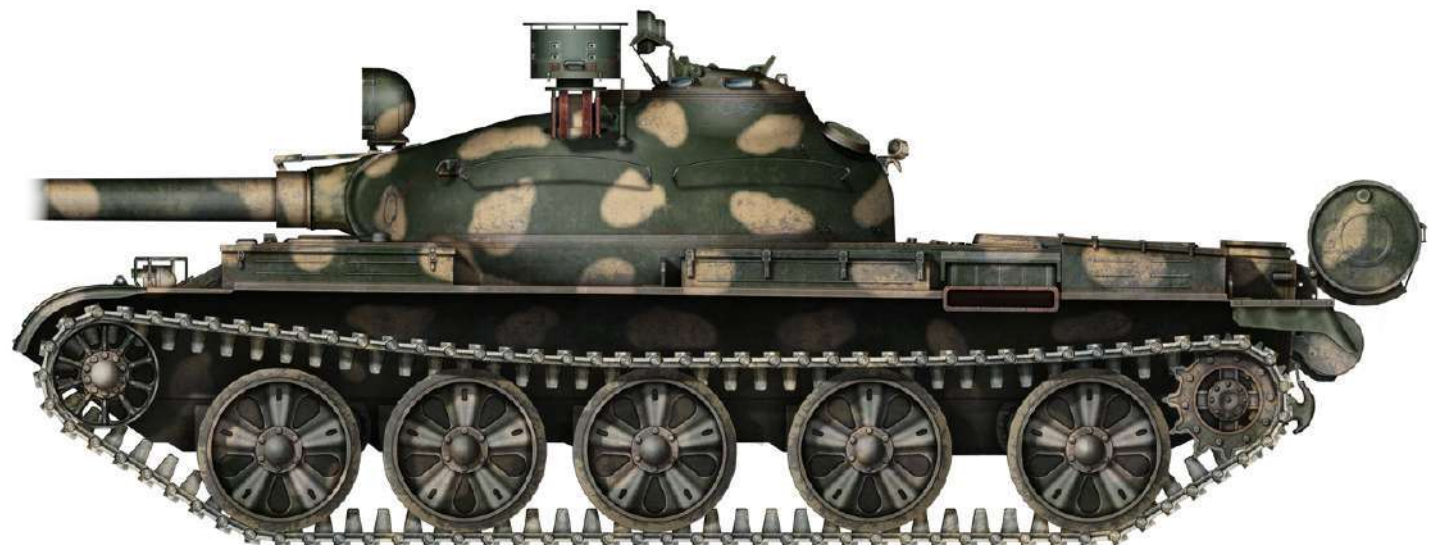
Syrian Arab Army Short Shoreland Armoured car

Originally developed and produce by Short Brothers and Harland in Belfast in the 1960s, the Short Shoreland was designed for use by the Royal Ulster Constabulary for the Troubles in Northern Ireland. It found far greater success internationally. Most variants used a series 2 Land Rover chassis and a Ferret Armoured Car turret. Syria fields a large amount of Shoreland types and it seems to have copied and manufactured their own versions. The variant pictured here is a MK4 with a Chinese DShK 12.7mm AA gun. Of interest are the paratrooper markings below the Syrian flag.



Syrian Arab Army T-62 Model 1972

This Syrian army T-62 minus it's DShK 12.7mm AA gun has a Sarab 2 anti-missile defence box mounted above the TPN-1-41-11 night sight unit. The Sarab 2 interferes with the initial guidance signal of missiles like the US TOW.





Syrian Arab Army T-72BM model 1989

This T-72BM is seen in action with the Desert Hawks unit in Aleppo. This vehicle retains its original turret and bow Kontakt-5 ERA armour but has extra earlier Kontakt-1 tiles fitted to the front of the turret, while Kontakt-1 tiles have added to the side of vehicle replacing some of the original T-72B side armour panels, easily knocked off during street fighting.



Syrian Arab Army T-55 with KMT mine roller system

The Syrian army has made extensive use of both the older KMT-4 seen in the photo and KMT-7 seen in the illustration during the civil war. Many vehicles being destroyed by rebel IEDs and ingeniously designed land mines using old artillery shells and bombs.





2. REGULAR ARAB ARMIES

2.7.1

IRAQ MODERN ARMY. MODERN VEHICLES

Britain created what can be considered the foundation of the modern Iraqi army in 1921, Iraq at the time being a British mandate over which they had installed King Fiasal. In 1958 Fiasal was removed in a bloody coup by Abd al-Karim Qasim who withdrew Iraq from the pro American Baghdad pact and turned towards Moscow for military aid and equipment. Qasim himself was assassinated by a group of Ba'athist officers in 1963. What followed was a period of instability and the retaking of power by the Ba'athist party again in 1968, the general secretary of the party at the time being one Saddam Hussein. During these years Iraq, though not a front line state would play a part in the 67 and 73 wars against Israel, sending volunteers to fight in Syria. It was during the Iran-Iraq war however that started in 1980 when the now president Saddam Hussein attempted to invade and take territory from neighboring Iran that would see the biggest test and transformation of the Iraqi army. Over the 8 year long war Saddam forces would expand massively acquiring vast amounts of modern equipment from around the globe. Though the Iran Iraq war ended in an uneasy truce it did not limit Saddam's regional ambitions incensed by Kuwait's demand for repayments on massive war loans and lack of gratitude for halting Khomeini's revolution in the gulf he decided to invade and keep Kuwait in 1991. Saddam's forces were routed by a much more advanced coalition force. What followed was crippling sanctions and in 2003 after the 9/11 attacks an invasion and occupation of Iraq by American led coalition forces. The Ba'athist party was disbanded as was the Iraqi army and its senior leadership, eventually the army was reformed while the Americans fought an insurgency throughout Iraq. The capture and killing of many

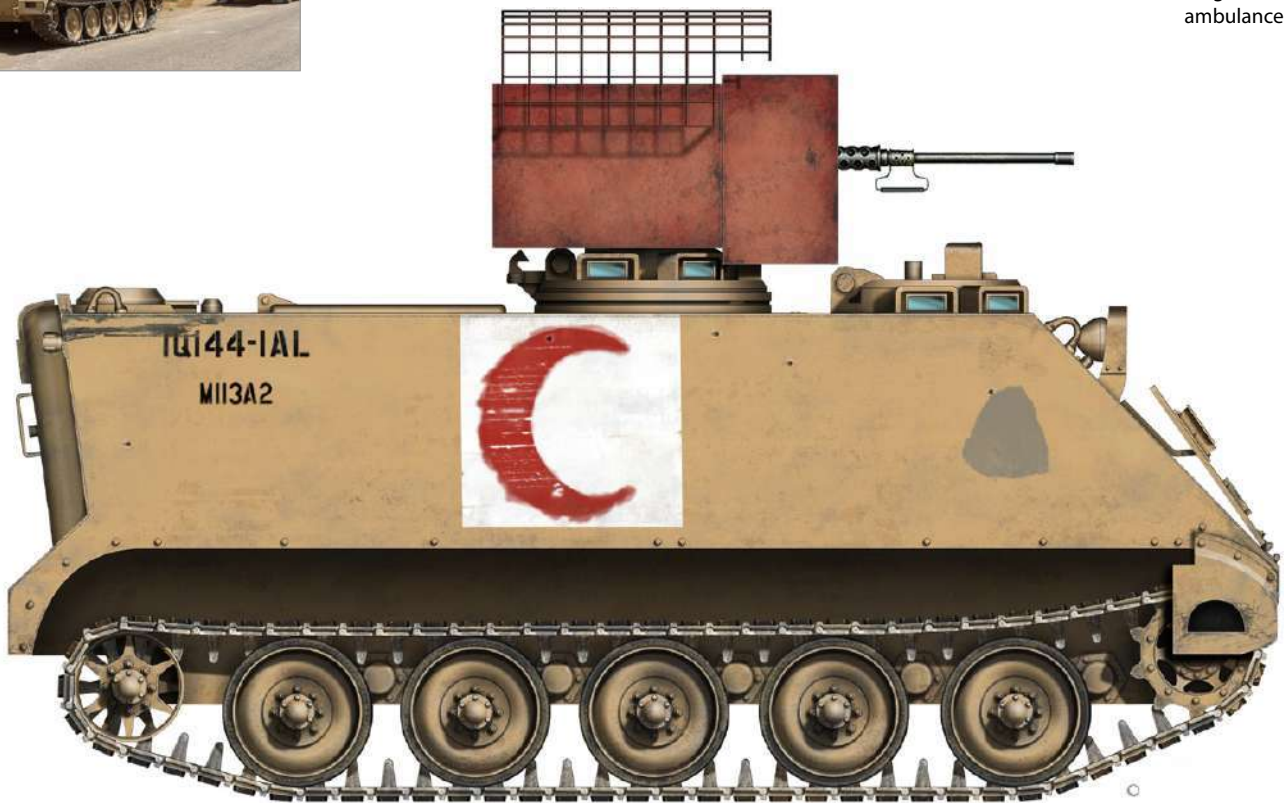
Ba'athist leaders including Saddam who was executed in 2006 did not stop Sunni, Shia or Al Qaeda from launching IED attacks, bombings and sectarian murders. It was the marginalization of the once dominant Sunni population by the Shia based Al Malaki government that would create the spark that allowed the once small force of Al Qaeda fighters under Abu Bakr al-Baghdadi morph into the Islamic state of Iraq and create a genocidal inferno that would consume central and northern Iraq. At first ISIS had the support of many sidelined Sunni Iraqis as they stormed through Fallujah, Mosul and a large swath of central and Northern Iraq. The Iraqi army fell back in disarray as their humiliation was broadcast by ISIS on the Internet. The reality of life under ISIS didn't take long to be brutally brought home to many Iraqis. Western airpower and the formation of mainly Shia based Popular Mobilization Forces halted ISIS allowing critical time for government forces to launch a series of offensives in central Iraq in 2015, while US and Peshmerga forces liberated territory in the North of the country. Iraqi army armament and equipment has gone through numerous changes since 2003, with reforming in 2004/5 its armour consisted of likes of US M113s, second hand Hungarian T-72s and Greek BMP-1s. By December 2008 Iraq was purchasing US M1A1 Abrams tanks and Ukrainian BTR-4 IFVs. In 2016 Iraq had returned to purchasing from Russia with large scale orders for T-90S and BMP-3s, now that ISIS is effectively defeated and a long period of instability and destruction is hopefully at an end it must surely be time for Iraq to put aside its weapons for a while and rebuild its destroyed cities and traumatized society.



Iraq M-113A2 Red Crescent

Iraqi M113, these robust old American APCs have served with the reconstituted Iraqi army since 2003.

This particular vehicle is mounting its original 50 cal. machine gun and improvised gun turret, many had ZSU 23mm or KPU 14.5mm AA guns added. Of interest is the Red crescent marking on this former ambulance variant.



Iraqi army T-72 M1

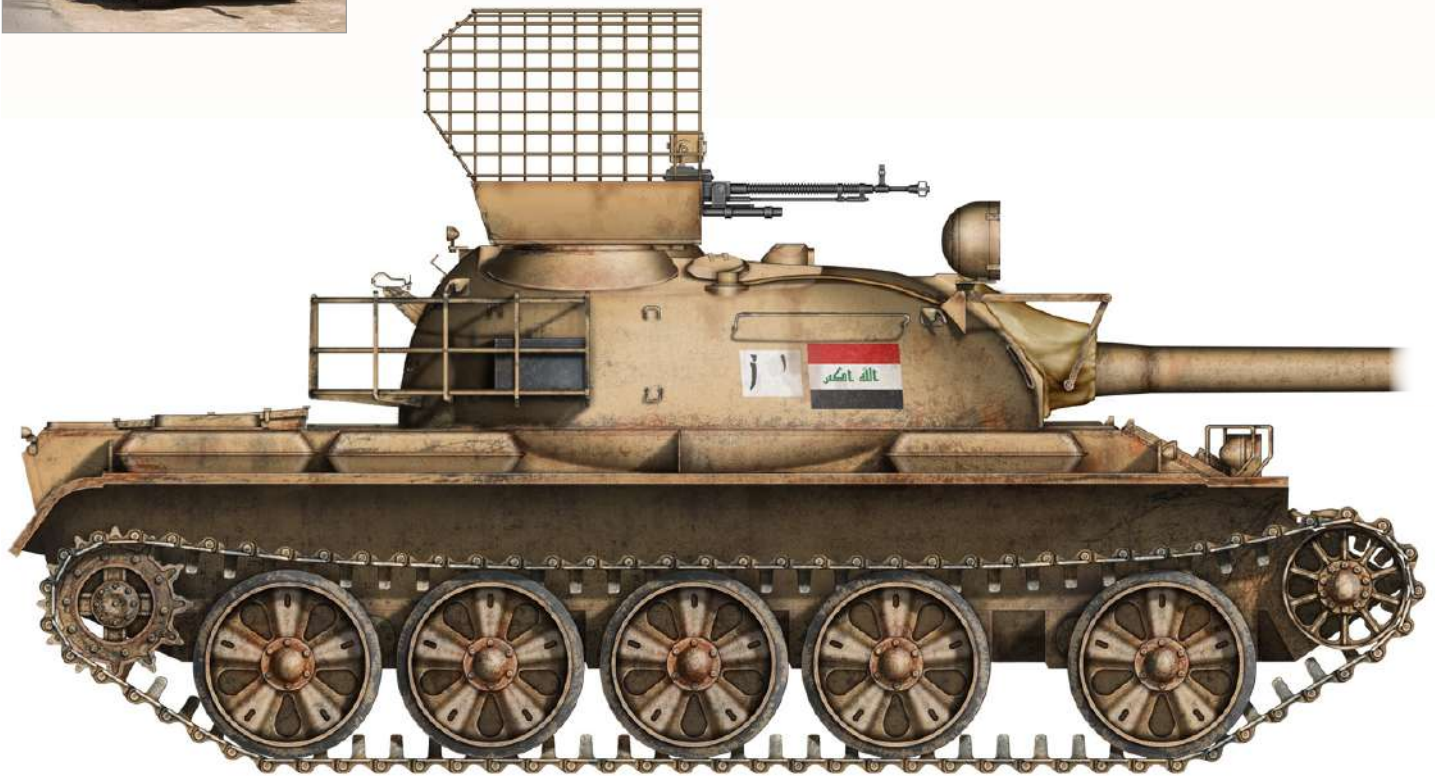
In the first number of years after the overthrow of Saddam the Iraqi army relied on second hand T-72s from new NATO members such as Hungary. This T-72 has been upgraded with the addition of a ACAV turret for the loader's operated NSVT 12.7MM machine gun.





Iraqi army T-55

This renovated T-55 has rear stowage baskets attached as well as an ACAV gun turret and canvas sun cover. The T-55 and Type 69 tanks are more likely to be seen in Popular Mobilization Units as M1A1s and T-90s are increasingly used by the army.



Iraqi Humvee with ZSU 23x2

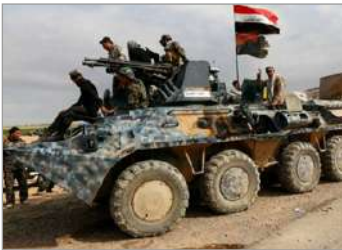
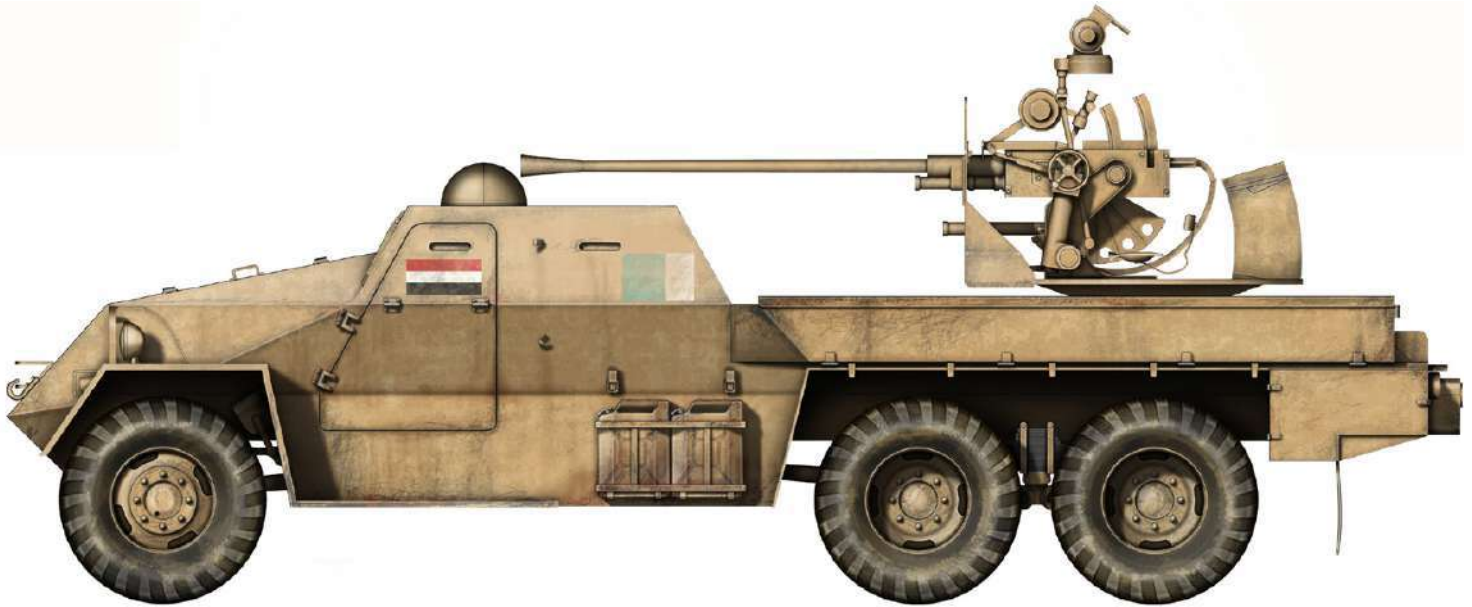
This combination of Iraqi Humvees with Russian ZSU 23mm anti aircraft guns have become increasingly common on the Iraqi battle field. The Iraqis utilise a number of Humvee variants including up armoured ones and as in this variants have proved to adapt at producing field modified armoured gun turrets.





Iraqi Popular Mobilization Unit M53/59 Praga with Norcano P793 (M1939 x 2)

This old fashioned Czechoslovakian Praga SPAAG saw plenty of action in the Balkans, but is not known for service during the Iran-Iraq war or other conflicts. It is one of a large number of older vehicles being repaired and put back into service by Shia militias. The Czechoslovakian made 30mm AA guns have been replaced by more common Chinese offerings.



Iraqi police BTR-94

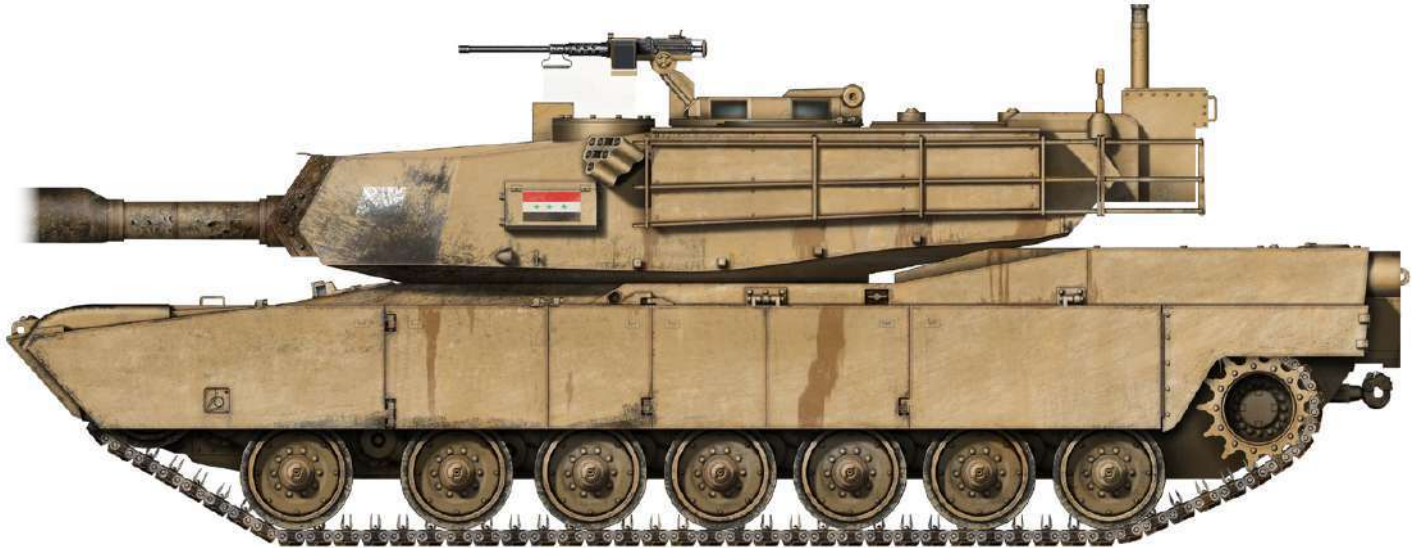
This modified BTR-80 with a BAU 23x2mm turret uses the same guns as those mounted on the ZSU 23x4mm Shilka. These APCs were supplied to Jordan from Ukraine between 1999 and 2000. Over 50 of this variant were later contributed to the Iraqi government by Jordan, a number of the BAU 23x2 turrets were also mounted on up armoured Hummers as well as on an SA-6 SAM launcher vehicle. A number of Iraqi BTR-94s have replaced one of the 23mm barrels on the BAU 23x2mm turret with a DShK 12.7 mm AA gun, while the upper turret has been up armoured with steel plate or standoff mesh.





Iraq M1A1 M Damaged

This battle scared M1A1 Abrams is one of 152 reconditioned vehicles supplied by the US. Iraqi Abrams were heavily involved in fighting with ISIS units during the long and protracted fighting in many of cities and towns in central and northern Iraq. By 2018 it was reported that 60 Abrams were out of action as a result of missiles and IEDs, while satellite images of the 9th armoured division's base at Taj showed 80 M1A1s lying up damaged or being used for spare parts. Iraqi M1A1s lack depleted Uranium armour and such items as the Commander's Individual Thermal Vision or CITV units.



Iraqi Federal Police T-72M

This former army T-72 may have been recaptured by Iraqi police units, minus it's side skirts this vehicle also has home made front mud guards. The blotchy blue camouflage is standard on Iraqi police vehicles.





Iraqi army M113

This Iraqi army M113 is one of a large number supplied by the US unlike many other M113s and other APCs it has a simple circular armoured cupola around the commander's hatch and fairly basic markings.



Iraqi M1A1SA Abrams with home made mine roller

This Iraqi Abrams has a home made mine roller mounted on the front of the vehicle built using box section and old T-55 front drive wheels. Other Iraqi Abrams had stand out armour screens welded to the front right hand side of their turrets. A strange situation when the tanks crews have to add such improvised additions considering the cost of these vehicles.





Iraqi army HET tank transporter unit

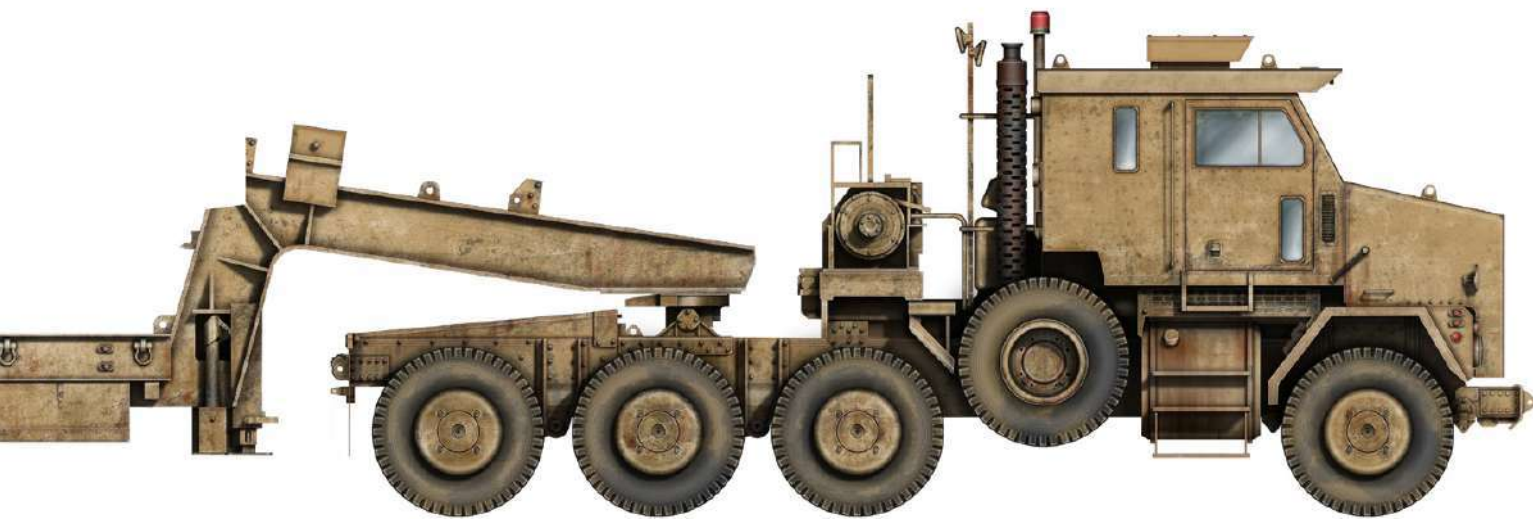
The Iraqi army received Oshkosh 60 M1070AO complete with 635NL semi trailers. Images of Iraqi HET tank transporters transporting M1A1 Abrams bedecked in Hezbollah flags caused a number of objections from US circles. In this illustration we see the Russian produced TOS-1 multiple rocket launchers on the 635NL trailer unit.



Iraqi army BMP -1A1 Osts

Upon restructuring the Iraqi army in the early post Saddam years, the Iraqis purchased or were given APCs and tanks similar to those already in service this included a batch of 100 ex Greek BMPs, themselves ex East German BMPs. These BMP-1s can be identified by the rectangular rear lights and turret smoke launchers amongst other items.





Iraq Police SA-6 with BAU-23 turret RF

Iraq BAU 23x2 Tel, This Iraq police conversion consists of a Ukrainian BAU 23x2 turret originally delivered on BTR 94s from Jordan mounted on an old 2k12 Kub SA-6 Gainful launcher TEL or transporter. It wears the distinctive dark blue and grey camouflage found on Iraqi police force Hummers and BTRs. Syrian forces also converted SA-6 TELs but with more powerful S-60 57mm AA guns.





2. REGULAR ARAB ARMIES

2.7.2

IRAQ MODERN ARMY. NON REGULAR ARMIES

Iraqi Popular Mobilization Forces

Formed by the Iraqi Government in 2014, the PMF consisted mainly of fighters from seven Shia militia groups including the Badr Organization and Kata'ib Hezbollah amongst others. Christian and Sunni groups also joined as top Shia cleric Ali al-Sistani called for the force to be non sectarian in his fatwa on Sufficiency Jihad following the ISIS take over of Mosul in 2014 and the subsequent massacre of 4,000 mainly Shia security personnel. At this vital time the Iraqi army and security forces were in disarray and PMF at first helped defend Iraqi cities and towns. As the tide changed and coalition forces airpower and the Iraqi military began to go on the offensive against ISIS the PMF took the war to the occupied Sunni regions. In 2016 Iraqi president Faud Masum approved a law that incorporated the PMF into the country's armed forces. The role of the PMF in the struggle against ISIS can not be underestimated with the force even creating a local Rambo like figure in the form Kataib al-Imam Ali commander Abu Azrael. Such figures gave Iraqis military and civilians figures to rally around during the

vital struggle to retake Iraq from ISIS. The PMF has taken part in most of the major engagements or retaking of towns and cities since 2015 including the battle for Tikrit, Anbar province, Mosul and in 2017 in the battle with Kurdish forces in the retaking of Kirkuk. The PMF have not been without criticism after the battle for Tikrit and Mosul there were accusations of war crimes and revenge killings against local Sunni suspects. PMF equipment comes from a series of sources including Iranian T-72s, BMP-2s and modified BTR-50s, these vehicles bear typical Iranian camouflage and are usually bedecked with Shia flags. American M1 Abrams, Humvees and M113s were also in use with the PMF till US criticism caused an end to this practice. The other important source of MBTs and APCs is the old tank grave yards of Al Taji, here mechanics have restore hundreds of old Saddam, and in some case pre Saddam era vehicles to fight in the liberation of Iraqi territory. In early 2018 the PMF was fully reorganised by its Commander and Chief Haider al-Abadi giving it ranks and pay grades equivalent to the Iraqi army.



iraqi AMX-10 P

These French built infantry fighting vehicles were supplied to Saddam's Republican Guard units late in the Iran-Iraq war. During the embargo years they lay idle in large open air tank parks like that at Al Taji, these vehicles and others like former Kuwaiti Chieftain tanks were refurbished by Shia Hashd militias for their fight with ISIS.



iraqi Popular Mobilization unit Chieftain

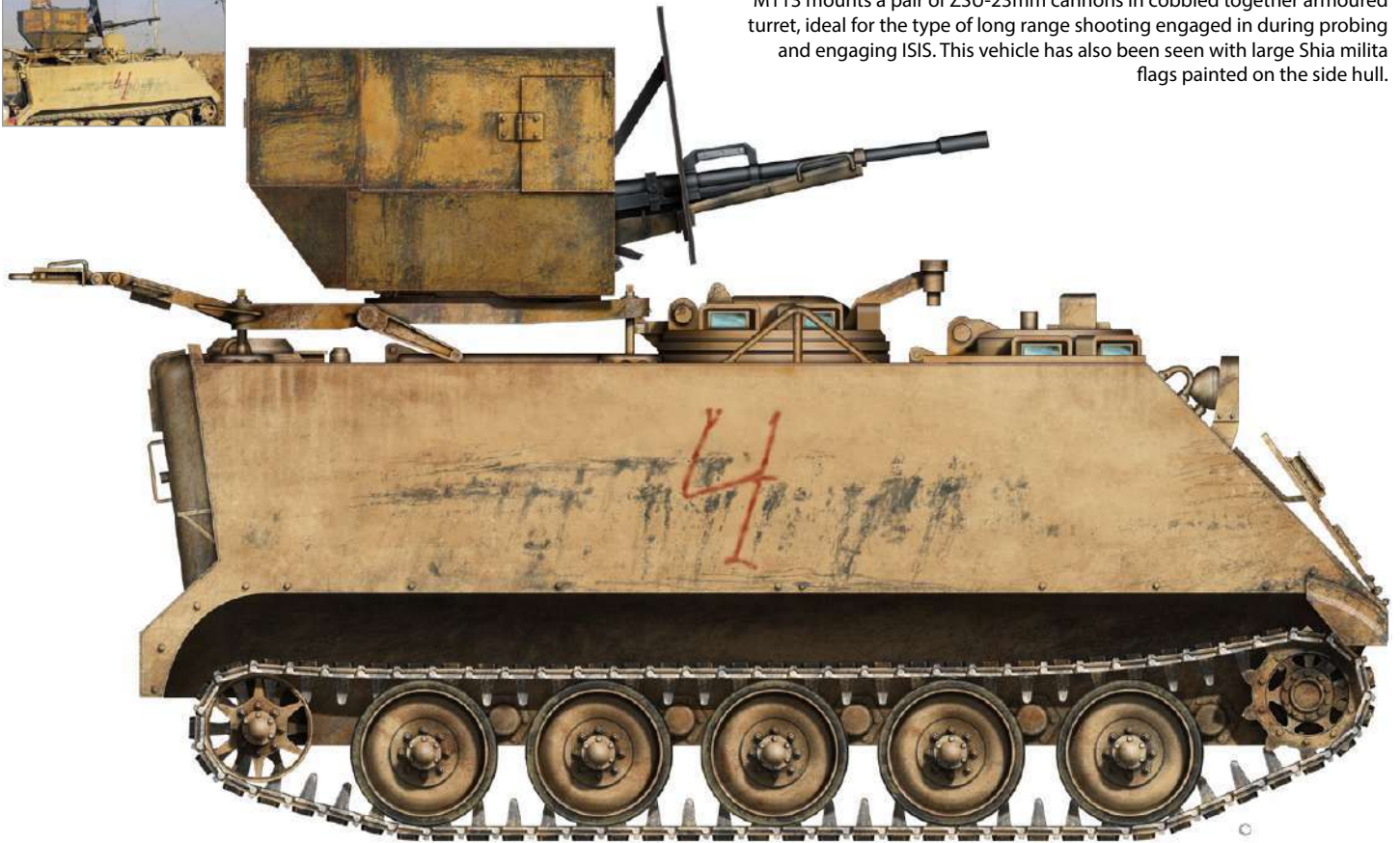
During the Iran Iraq war, Iraqi forces captured a large number of Iranian Chieftain tanks, and later Kuwait variants were also absorbed into the Iraqi army. In mid 90s numbers of these and other vehicles were donated to the Iranian people's Mujahideen. As a part of a refurbishment drive by the PMU or Shite militia small numbers of Chieftain tanks and other Saddam era weaponry were made serviceable again for the war against ISIS.





Shia militia M-113 with ZU-23-2 RF

Iraqi M113, while too lightly (with Aluminium armour) armed for the pitched battles with ISIS the M113 is a reliable platform for heavy duty AA guns . This M113 mounts a pair of ZSU-23mm cannons in cobbled together armoured turret, ideal for the type of long range shooting engaged in during probing and engaging ISIS. This vehicle has also been seen with large Shia militia flags painted on the side hull.



Kata'ib Hezbollah M113 with ZSU-23mm

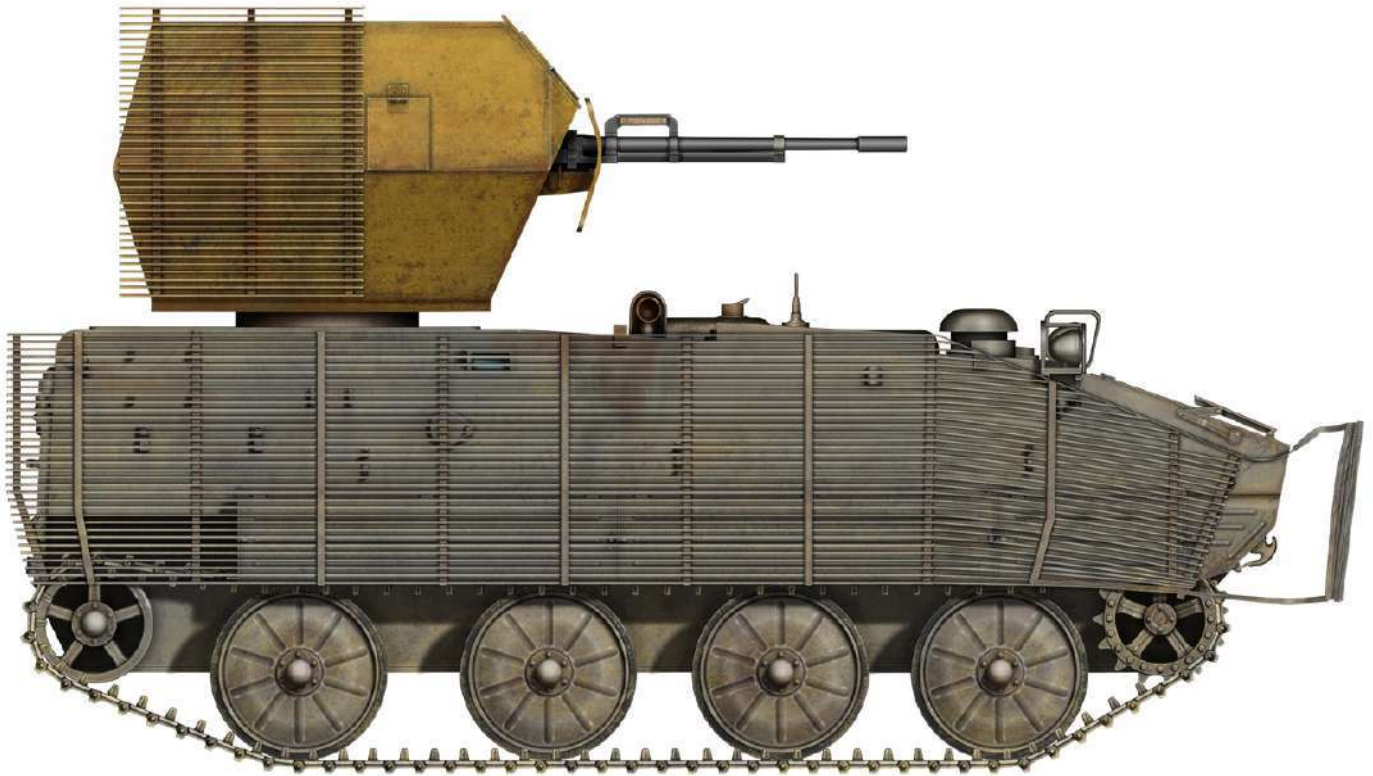
Kata'ib is an Iranian sponsored Shia militia that plays a major role in the Popular Mobilization Units. The large Yellow and green flag can be seen flying on vehicles or painted on the hulls as in this case .





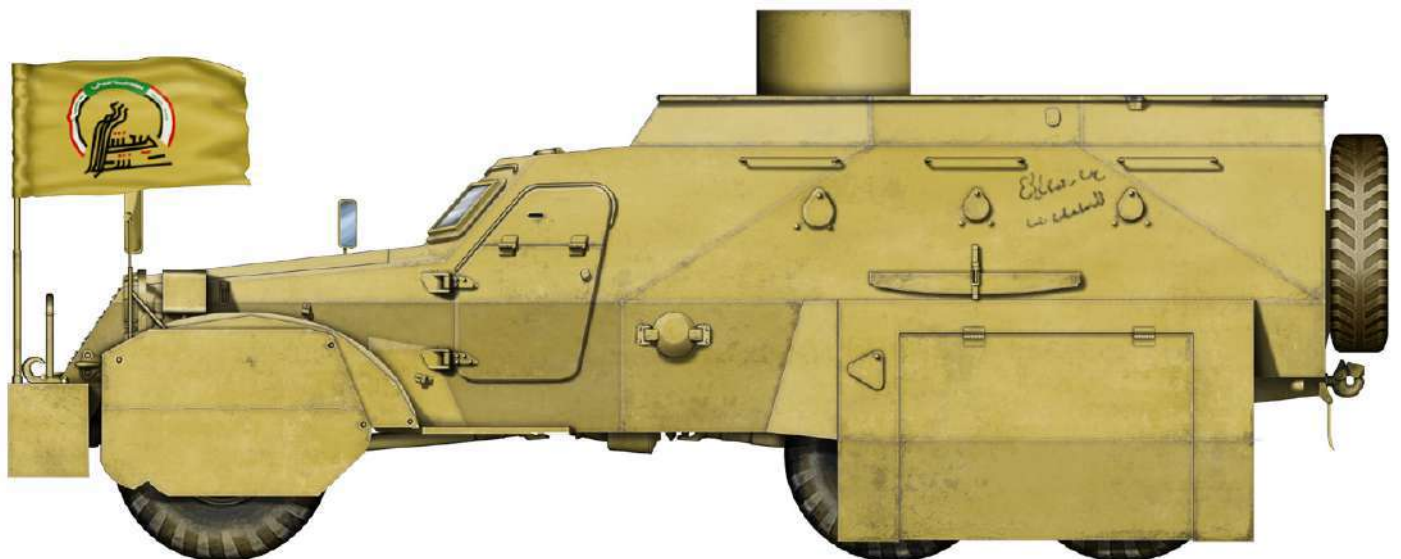
Iraqi Popular Mobilization Unit 531/Type 63 with ZSU-23mm AA gun

Relatively rare in Iraqi armouries now. At least 650 YW-531s and other variants were delivered to Saddam's army between 1982 and 88. This vehicle had been installed bar armour and a ZSU-23mm gun turret added to enhance its protection and fire power.



Shia Militia BTR-152

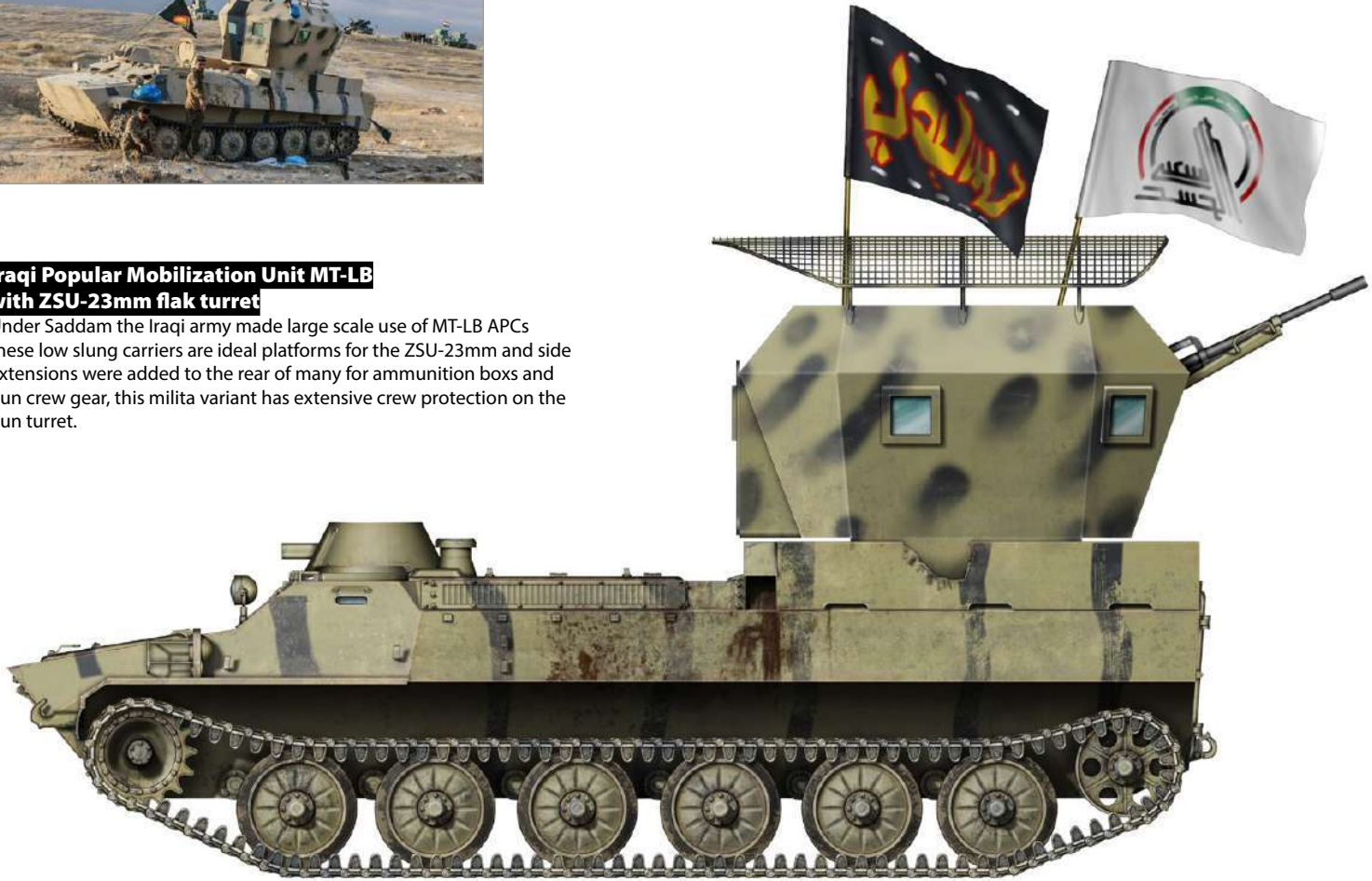
Due to the vast scrap yards in Iraq of old Saddam era armour and weaponry the Popular Mobilization Units have been able to cannibalise lots of old MBTs and APCs. Vehicles such as the T-55, Type-69, MTLB and even British Chieftains have found their way back into service with the PMU but more surprising is the appearance of pre Saddam era Praga AA trucks and this BTR-152. This BTR had armoured shields added as wheel covers and has had its upper body armour extended by a number of inches for action fighting ISIS in the Hatra area South West of Mosul.





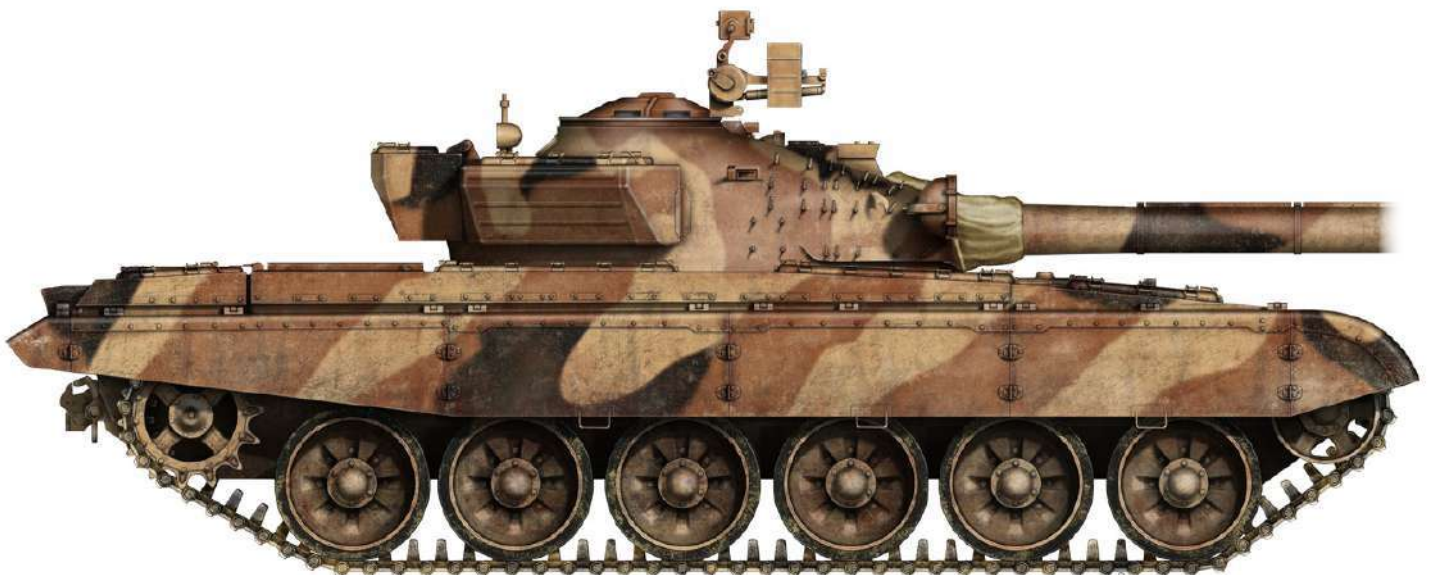
Iraqi Popular Mobilization Unit MT-LB with ZSU-23mm flak turret

Under Saddam the Iraqi army made large scale use of MT-LB APCs these low slung carriers are ideal platforms for the ZSU-23mm and side extensions were added to the rear of many for ammunition boxes and gun crew gear, this militia variant has extensive crew protection on the gun turret.



Iraqi Kata'ib T-72S

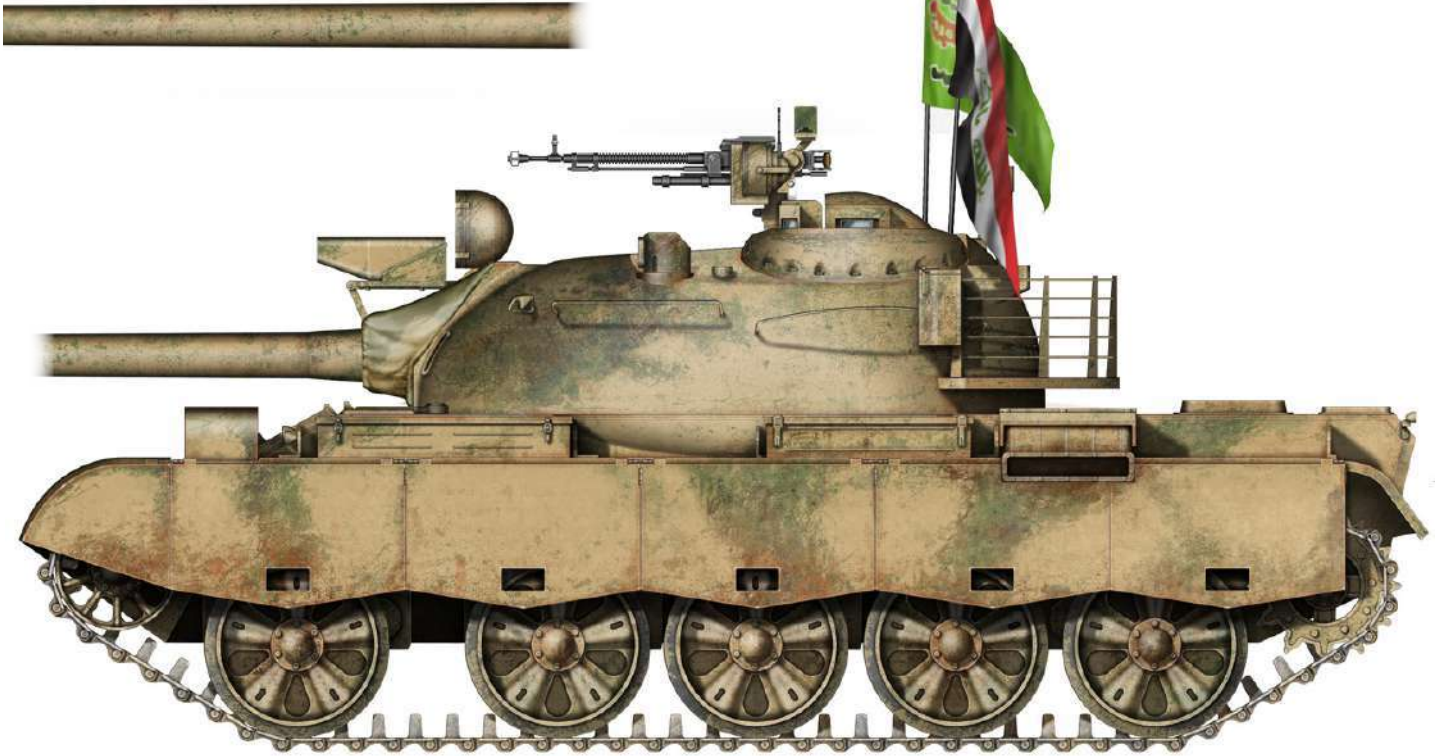
These Iranian manufactured T-72s have been supplied to Iraq it is unclear if they are on loan to Kata'ib, sold to the Iraqi army or crewed by Iranian volunteers. What is strange is that they were supplied without the Kontakt-1 ERA tiles by the Iranians.





Iraqi Popular Mobilization Unit Type 69 II

Large numbers of Chinese T-69s and former Soviet and East block T-55s were sold to Iraq. This T-69 is one a large number supplied without turret mounted smoke launchers, of note are the large Shia militia flags a standard feature with such units.



Iraqi T-55 /AZP S-60 conversion

This highly effective conversion of a standard T-55 chassis as a gun platform for a 57mm S-60 AA gun allows for excellent long range gunnery against ISIS targets. While many of these guns were used in the ground role, it is worth noting that an ISIS unit managed to shot down an Iraqi air force Cessna 208 Caravan in 2016 with one of these obsolete AA guns.





Iraqi BMP-2

Like the Iranian supplied T-72S variants these former Iranian BMP-2s wear the Sand and brown camouflage scheme used by the Iranian army.



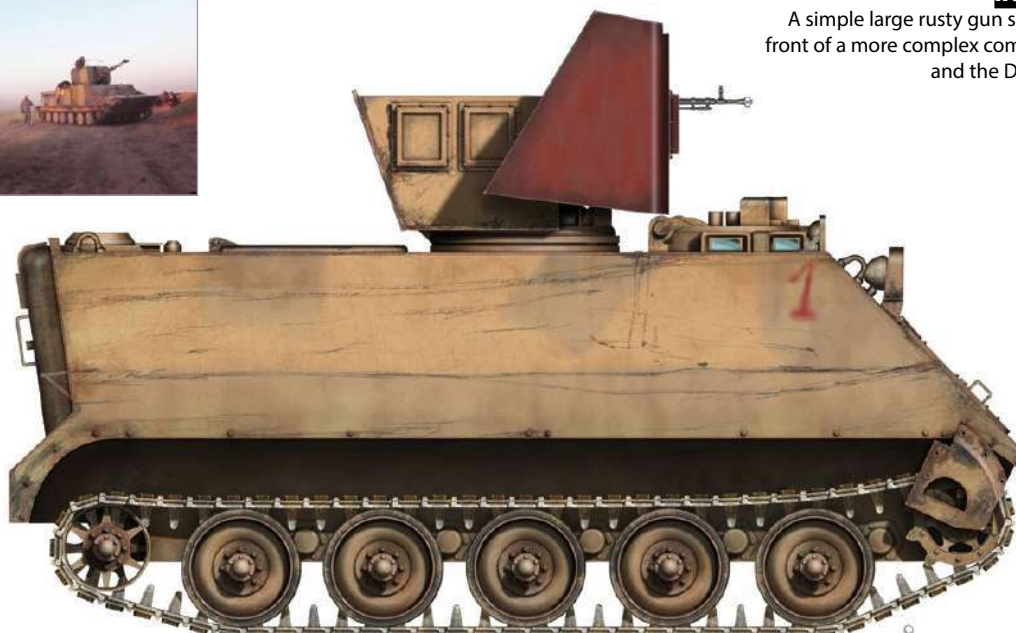
Iraqi PMU MT-LB with ZSU-23mm

The MTLB has served in the Iraqi armed forces in various guises for over 2 decades. This example has an enclosed gun turret with the now standard ZSU-23mm for urban combat in operations retaking towns from ISIS /ISIL.



Iraqi PMU M113

A simple large rusty gun shield mounted in front of a more complex commander's cupola and the DShK 12.7mm MG.





Iraqi Popular Mobilization Unit BTR-50 flak ZSU-23mm

This elderly BTR-50 has the rear railing fitted to both Iranian and Iraqi BTR-50s during the Iran-Iraq war.

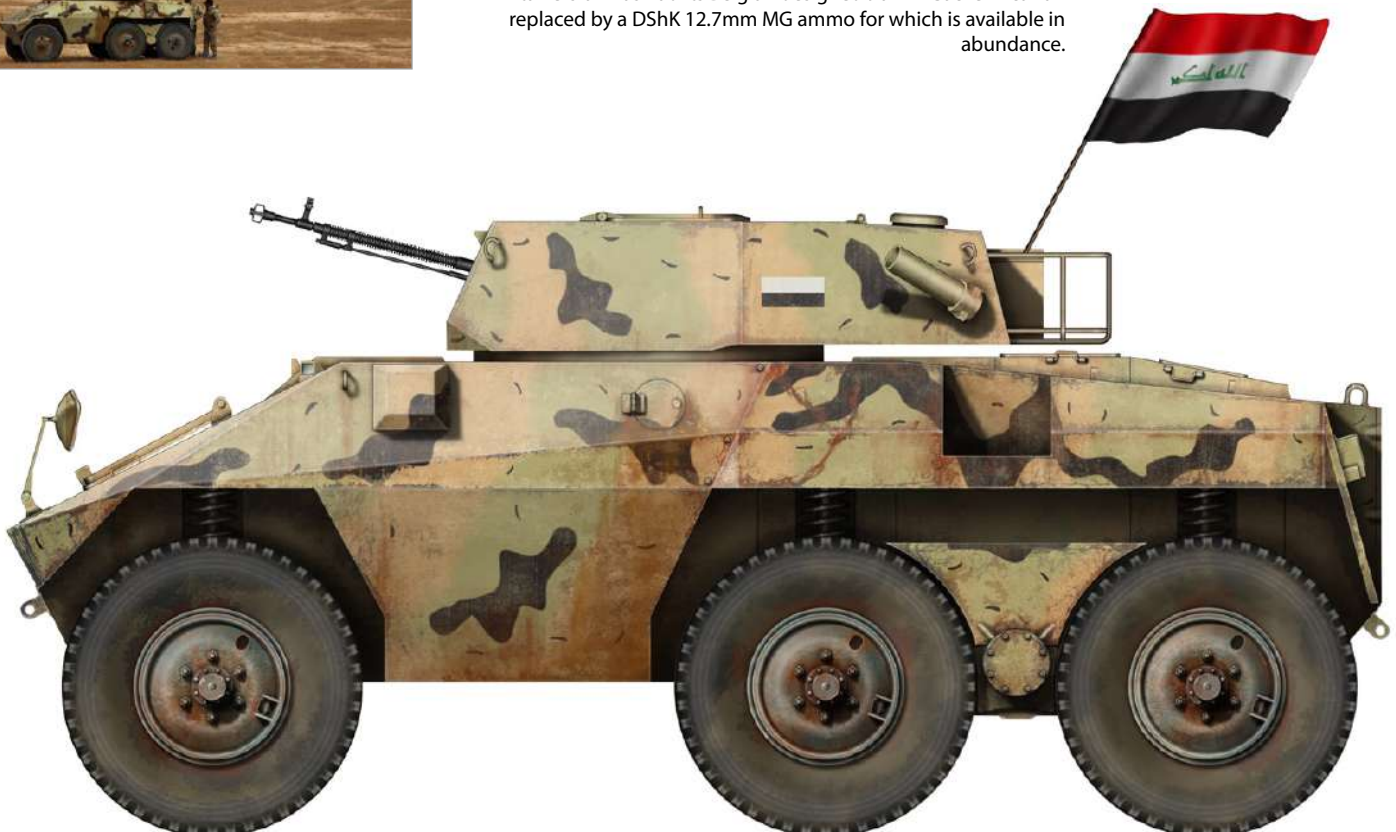
These simple straight forward APCs are obviously easy enough to restore to working order and by the fact that their engines are half of a T-55 V12 engine simple enough to get parts for. The ZSU- 23mm AA gun in a home made armoured turret is the norm on such updates.

Under Saddam the Iraqi army made large scale use of MTLB APCs these low slung carriers are ideal platforms for the ZSU-23mm and side extensions were added to the rear of many for ammunition boxes and gun crew gear, this milita variant has extensive crew protection on the gun turret.



Shia Militia EE 9 Cascavel

During the Iran-Iraq war, Saddam Hussein's military purchased thousands of armoured vehicles from around the globe. Brazil's fledgling arms industry in the form of Engesa sold the Iraqis hundreds of EE9s and EE11s armoured cars, these cheap and reliable vehicles were also used by the Iranian people's Mujahedeen. After the US invasion of Iraq, US forces restored 35 EE9s to service, since then Iraqi Shia milita followed suite, this milita version has had its Belgian designed 90mm Cockerill canon replaced by a DShK 12.7mm MG ammo for which is available in abundance.



2. REGULAR ARAB ARMIES

2.8

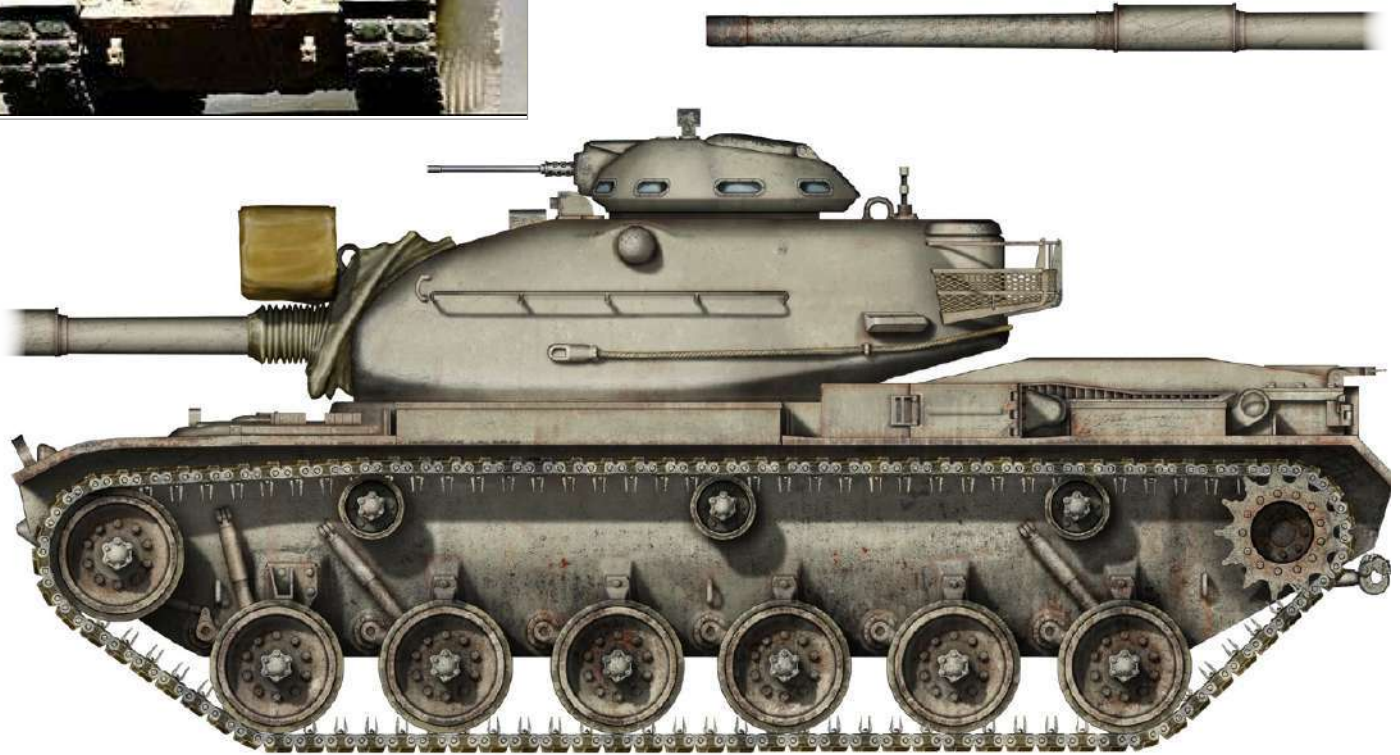
YEMEN ARMY

Following the unification of North Yemen (a traditional tribal based state) and South Yemen (a former Marxist secular state) in 1990 many in the South felt their oil reserves were being usurped by the North, the situation went from bad to worse. In 1994 a civil war erupted as Northern forces attacked and defeated the South, in October of that year a new electoral system would see the election of President Ali Abdullah Saleh. The story of the Yemen and its descent into chaos is interlinked with Saleh and his urge to grasp on to power come what may. The Arab spring brought ordinary people out on to the streets of North Africa and the Middle East demanding change, an end to corruption and so it was on the streets of Yemen in 2011 Saleh must go they demanded. It was decided Abdrabbuh Mansour Hadi his assistant would replace him. Hadi however was unable to deal with Southern separatists, Shia Houthis rebels and Saleh supporters, not to mention massive unemployment, food shortages and suicide bombings. Saleh and his supporters sided with the Houthis as they took over the capital Sanaa and attempted to take control of the entire country. As the Houthis surged forward in 2015 Hadi fled to Saudi Arabia, the Saudis in turn formed an alliance of Arab nations to attack the Shia Houthis, fearful of their connection with Iran. Saudi air strikes and governmental chaos has ensued with various factions commandeering old Russian built tanks, American APCs and South African IFVs. Houthi forces have also begun to retaliate Saudi bombings of markets and civilian infrastructure by launching modified Scuds and SA-2 Guidelines at Riyadh.



Yemeni Army M60A1

While delivery numbers of the M60A1 to Yemen differ widely it is said that at least 50 were available at the start of the Civil war. In earlier confrontations with the Houthis a small number were captured in 2009, later when the Houthis effectively took power in Yemen a number were destroyed in Saudi air strikes of military bases. On the border with Saudi Arabia Houthi units have managed to ambush and destroy numerous Saudi vehicles including a number of Saudi M60s, AMX 30s and M1A2s in areas such as Ma'rib.



Yemeni Army Ratel AA with BAU 23mm turret

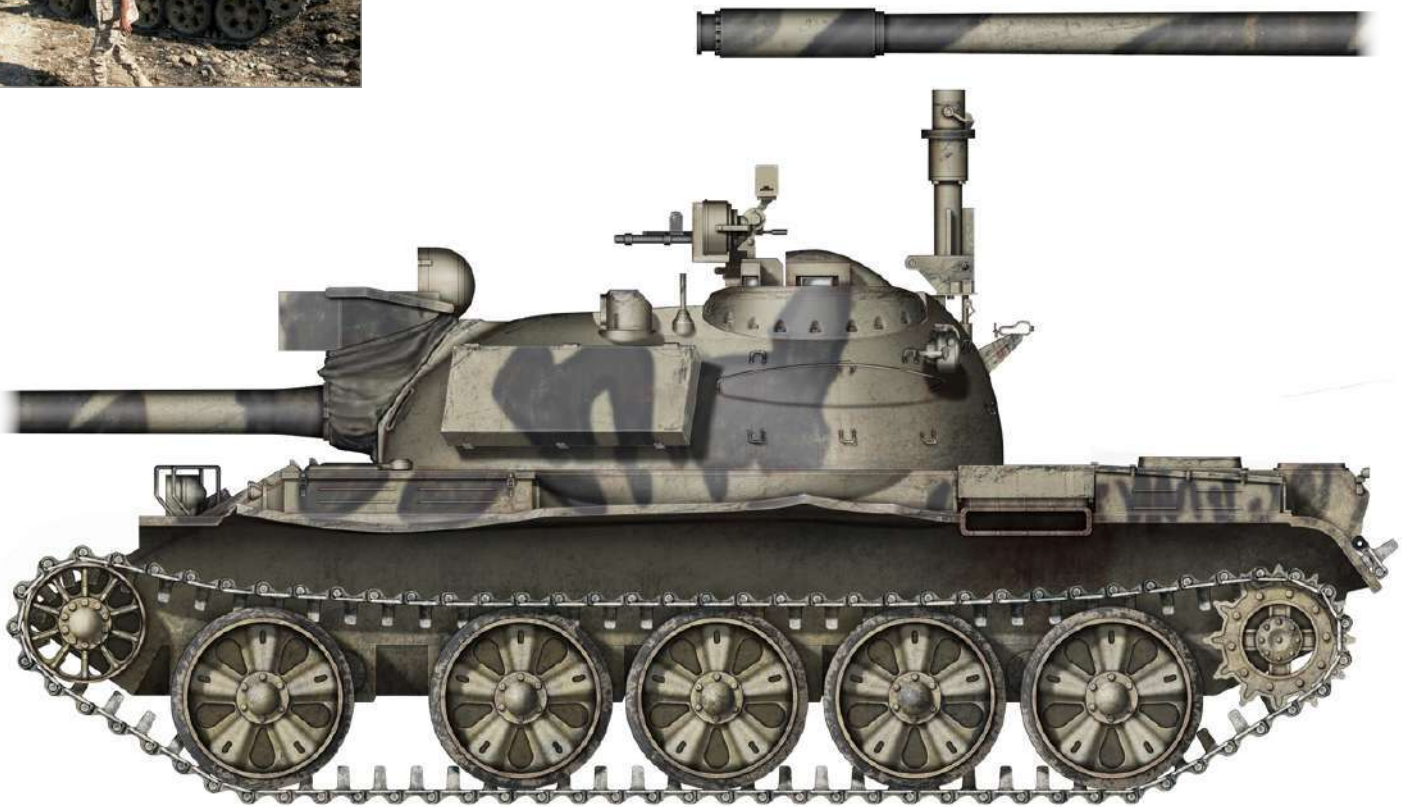
This interesting hybrid combines a South African Ratel IFV with a Ukrainian BAU 23mm AA gun turret. Jordanian company KADDB produced a number of these conversions for the Jordanian forces which then exported them to Yemen. Some of these vehicles have ended up with pro Haddi forces and then been destroyed in Houthi ambushes.





Yemeni Army T-54AM1

Yemen received 97 T-54/55AM1 and T-55AM2 in the year 2000 from the Czech Republic. The T-55AM1 is equipped with the Czechoslovakian produced Hammer fire control, Laser Range Finder and retractable wind sensor unit. It joins T-55 and T-55As already in service.



Yemeni Army T-80BV

Yemen obtained 31 T80 BV variants from Russia in 2000 plus a further 66 from Belarus. These advanced tanks were highly thought of in the Yemeni Army but the OMSK built tank was not a very successful design. In the battle for Grozny 225 were destroyed and the gas turbine engine performed extremely poorly, this fact, design flaws and high operating costs led to General A. Galkin of the Armour Directorate deciding to never again procure tanks with gas turbine engines.





Yemeni Army T-62

Yemen is thought to have obtained 150 T-62s including model 1962 and model 1972 variants. Typically they appear in Sand and Brown camouflage or faded green. T-62s are used by the Houthi and pro Haddi Southern separatists. In one incident Saudi Arabian M60s can be seen engaging Yemeni T-62s in rare tank on tank combat.



Yemeni Army M167 VADS

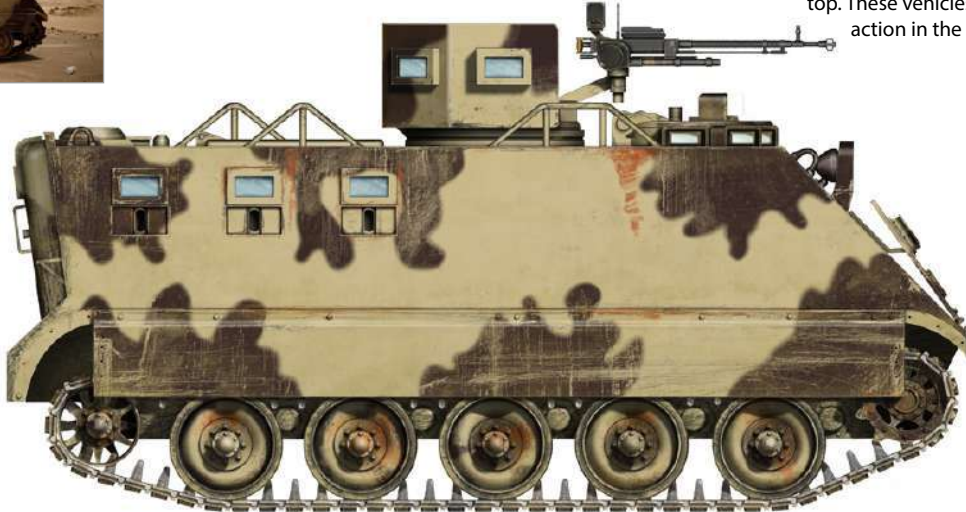
The Yemeni army had apparently required the mobile M163 based on the modified M113 chassis but had to take delivery of the static variant due to various restrictions on foreign arms sales to the Middle East. Unperturbed Yemeni forces mounted the 20mm M167 in the rear of BTR-152s, in unarmoured Hilux pick ups and in US M35 trucks as depicted here. Houthi forces have used the Hilux based M167 as recently as July 2018 against Saudi coalition forces in the Gulf of Aden area.





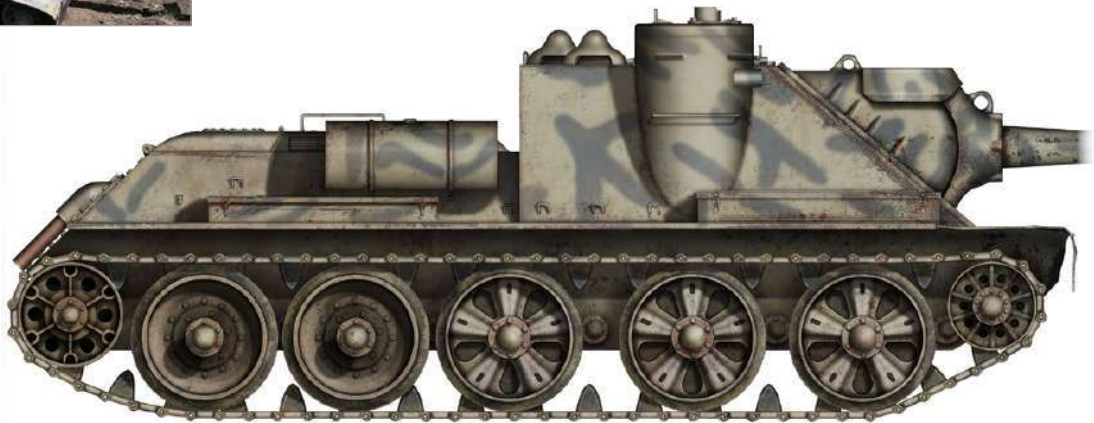
Yemeni Army M113

Numbers for the M113 in Yemeni service differ widely from between 32 supplied by the US in 2006 to 107 some of which may have been supplied from neighboring countries. What is clear is that Yemeni Army personal have updated the M113s in service with vision blocks and gun slots on the rear and sides of the vehicle, an armoured DShK 12.7MM cupola on top. These vehicles have seen much action in the ongoing civil war.



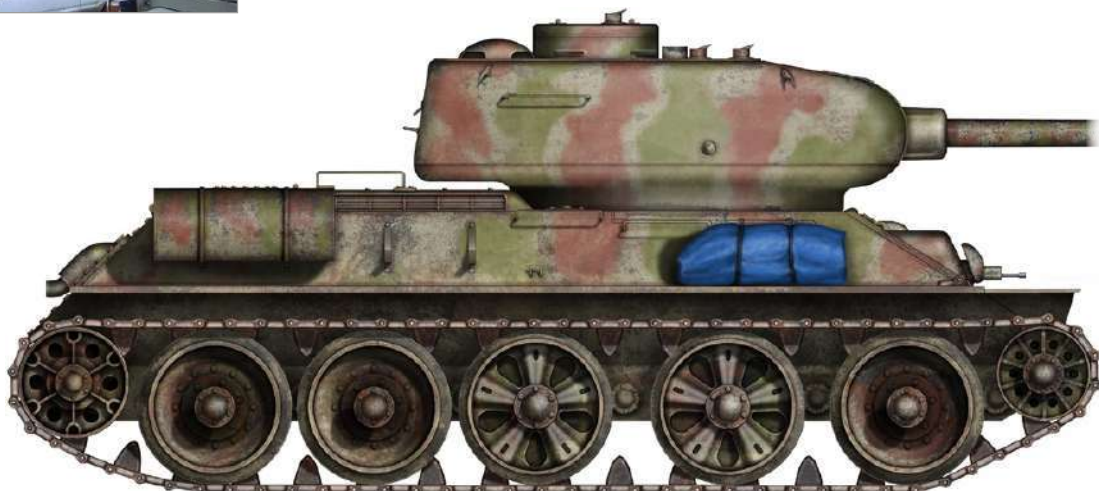
Yemeni Army SU-100

These World War Two Soviet produced 100mm armed tank destroyers were widely exported to Arab countries in 50s,60s and 70s but to see them in active service is testimony to their resilience and still powerful gun. As late as 2018 pro Haddi forces backed by Saudi Arabia released footage of group of vehicles including an SU-100, T-34/85, T-55 and ZSU-23 Shilka on a milita parade ground.



Yemeni T-34/85

Another World War Two era war winner the T-34/85 is truly a museum piece. In the hands of Yemen's factions the T-34/85 has seen action more as a mobile gun than tank with crews firing the main gun by command wire through the side pistol port, indicating perhaps a certain nervousness about firing the elderly gun from inside the tank. The mix of post war road wheels is noteworthy.





Yemeni Army ATS 59 /D30 122mm SPG

These straight forward conversions, with rear mounted D30 and armoured cab is typical of some of the interesting Yemeni military conversions that have come to light. Others include AML-90s with BTR-60 turrets and BTR-60s with AML-90 turrets.



Yemeni Army BTR-152

This BTR-152 combines a BTR-60 14.5mm machine gun turret, a new roof, vision blocks and gun slots to produce a uniquely Yemeni conversion. Some variants may have new engines judging by large side mounted exhaust seen on at least one vehicle.



Yemen forces Scud B

The Houthis forces in Yemen have used a series of missile types to retaliate Saudi bombings of their territory. A small number of Russian built 9P117M1 launch vehicles and North Korean Hwasong-5 launchers still survive and have indigenous Burka 2-H and Iranian Shahab-1 missiles at Saudi Air bases, oil facilities and the capital.





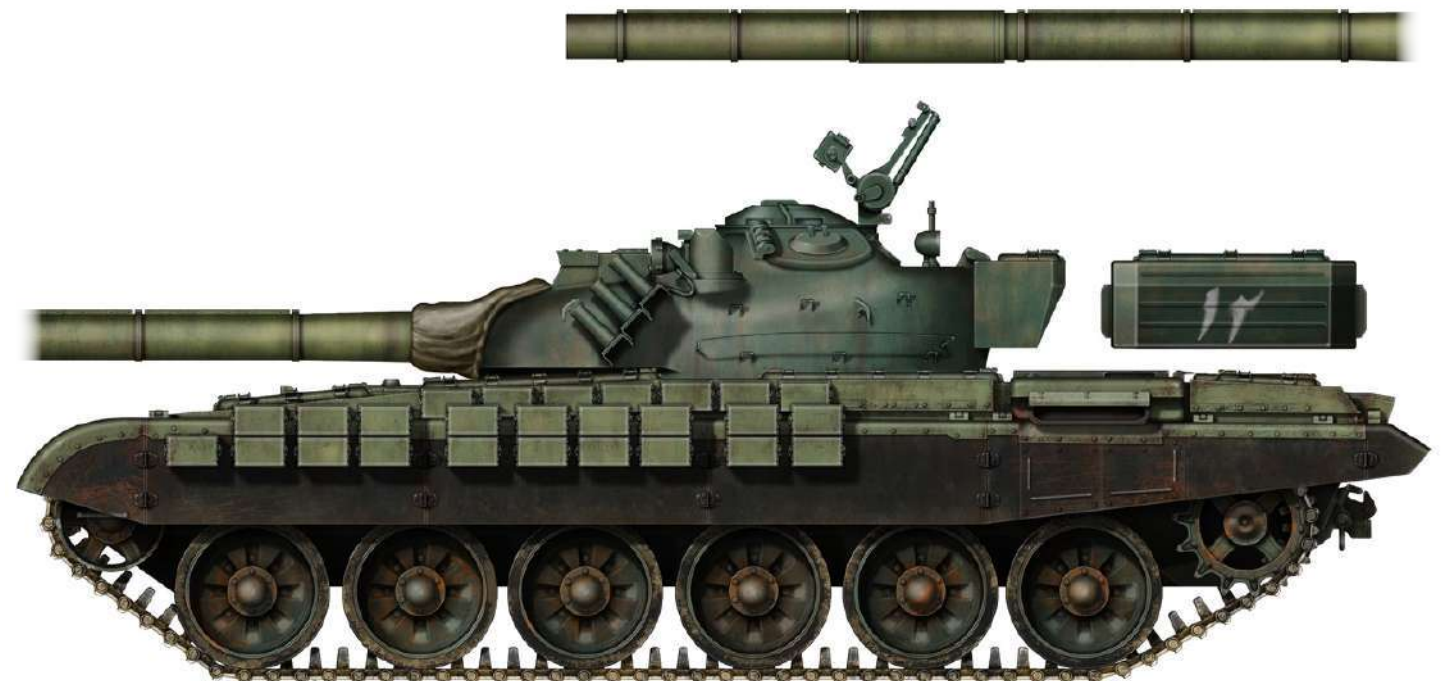
Yemeni Army T-55 AM2

This variant of the T-55 series is the most advanced in Yemeni service, with Hammer fire control system of the AM1 above but also the extra horse shoe and bow armour attached. The T-55AM2 has featured widely in the battles between the Haddi forces and the Houthis.



Yemeni Army T-72S

Yemen received the T-72S and T-72B variants, this T-72S is pictured in Sanaa where the Houthis forces probably retain these vehicles for the defence of the capital for the inevitable taking of the city by Saudi backed proxy forces.





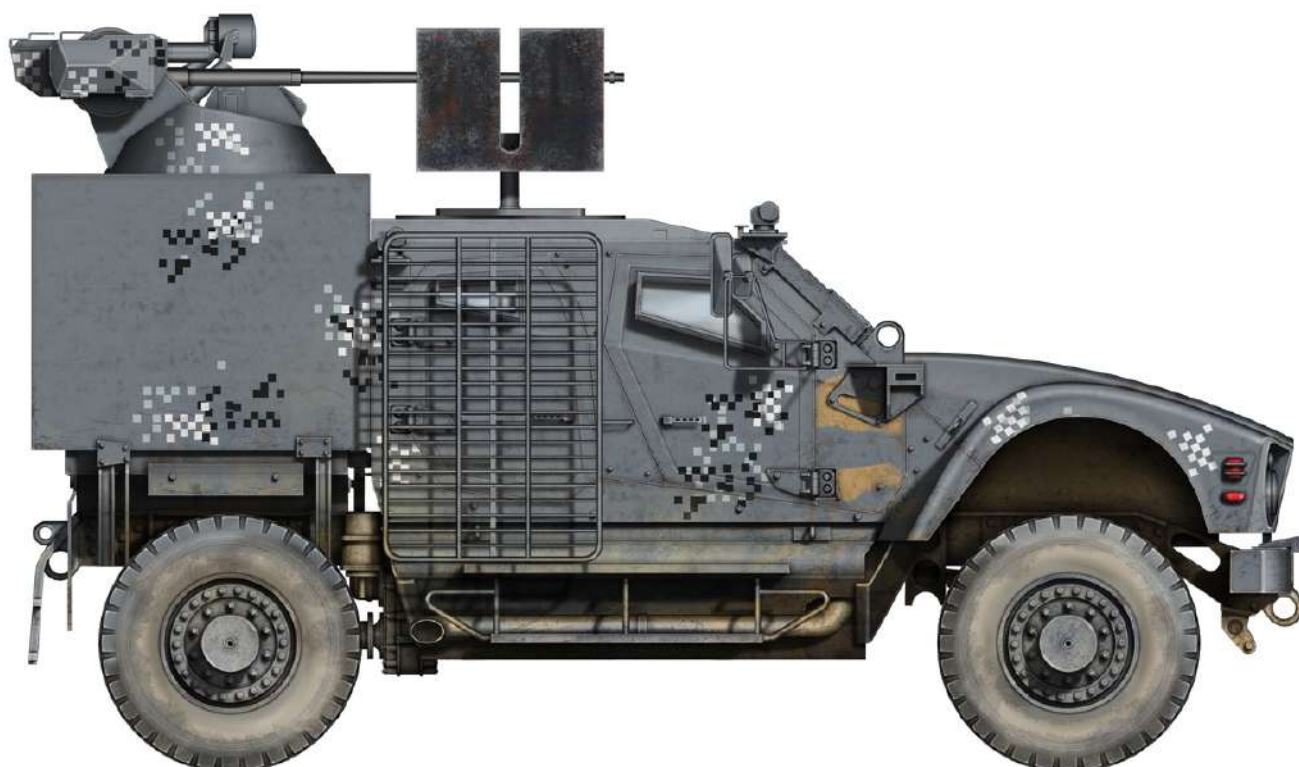
Yemeni army /Southern separatists forces Oshkosh M-ATV

These vehicles were supplied by the UAE during their ongoing involvement in the Civil War. Having deployed G6 Rhinos, Le Clerc tanks and BMP3s the UAE wisely withdrew their own troops after increasing losses and began to arm proxy factions instead. This M-ATV has been up gunned with, you guessed its a ZSU 23mm x 2.



HASM battalion M-ATV with BTR-80A turret

This Salafi militant group is based around Aden and is one of three anti Houthi groups with UAE backing. Another HASM conversion of this nature is a Humvee with BTR-80A turret in similar camouflage.





2.9

2. REGULAR ARAB ARMIES

TURKISH MILITARY HISTORY

Turkey has by and far one of the largest armies in the region, positioned as it is between Europe and the middle east it is also a key NATO member. Turkey had a long imperial history of military conquest though out North Africa and the Balkans in the cusp of the Ottoman empire, an empyre that, by the late 1800s, was well and truly in decline and referred to as "the sick man of Europe". It was the key figure of Mustapha Kemal Atatürk, and his fellow young Turks who had fought with distinction at Gallipoli and later in Turkish war of independence in 1920s that decided that Turkey needed to cast off the Sultan Abdul Hamid's corrupt and authoritarian rule and replace it with a secular Republic which was established in 1923. It was this legacy that the Turkish military have tried to ensure, not always too smoothly. Turkey's recent domestic history is one where the military dominated the civil government with more than 4 successful coups since the 1960s. In 1960 Prime minister Adnan Mender was removed from power and executed for treason, with the military effectively controlling politics till 1965. Wide spread economic and civil unrest in 1971 saw the military once again step in to restore what they saw as law and order. Forcing the then prime minister Süleyman Demirel to resign, Turkey was to have 11 prime ministers in the 1970s. Clashes between right wing and left wing groups broke out on the streets in 1980 as further political turmoil ensued thousands of assassinations followed and the military again imposed martial law and dissolved the government. Chief of staff Kenan Evren became president with thousands of people arrested and dozens executed. The Islamic orientated Welfare Party and it's political success in the mid 90s became a growing concern for the military and in 1997 during what is referred to as the postmodern coup they introduced various decrees targeting religious and conservative groups in Turkish society forcing the then Prime Minister Necmettin Erbakan to resign. In 1999 the now president Recep Tayyip Erdoğan was jailed for reading an Islamic poem and banned from politics for a time, his Justice and development party however went from strength to strength as his appeal to Islamic conservatives and Turkish nationalist had major mainstream

appeal. Erdoğan became prime minister in 2003 going on to become the first directly elected president in 2014. In July 2016 a coup attempt by small groups of tank troops made it seem that Erdoğan might end up like his various successors but scores of his supporters came out onto the streets and the coup was foiled. What followed was the arrest of 10,000 thousands of soldiers, 30,000 Judges and Gulenists and the firing of 160,000 people in various state institutions. Allowing Erdoğan to break the power of the army in Turkish politics it seems for once and for all perhaps? Only time shall tell. Erdoğan's somewhat erratic approach to foreign policy and the Kurds have seen mixed results for the military. In 2015 he declared that the long running truce with the PKK was over and instructed the military to launch attacks against Kurds in Turkey and Syria in retaliation for a series of car bombings in Turkey at a time when Kurds were desperately fighting ISIS. As early as 2013 various Turkish border cities had become staging points and logistic hubs for militants on their way to join ISIS, with wounded militants getting treatment in Turkish hospitals and the wide spread sale of ISIS oil through Turkish front companies, this passive support for such a group led to bewilderment among Western allies. As of 2017 the Turkish military launched Operation Euphrates Shield to secure a large area of Syrian territory between Afrin and Manbij. In early fighting with ISIS and then the YPG the Turkish military lost a number of Leopard 2s, M60A3s and Israeli updated Sabras. This operation was followed up by oddly named Operation Olive branch in 2018, when Turkish armour and troops were backed up former Jihadists took the YPG controlled city of Afrin, a group who were working with coalition forces fighting ISIS. Erdoğan seems determined to create a Sunni buffer zone in Northern Syria as a means of blocking Kurdish consolidation in the region. On the ground it seems that Turkish Leopards and Sabras will be patrolling for many years to come yet if their intervention in Cyprus in 1974 is anything to go by.



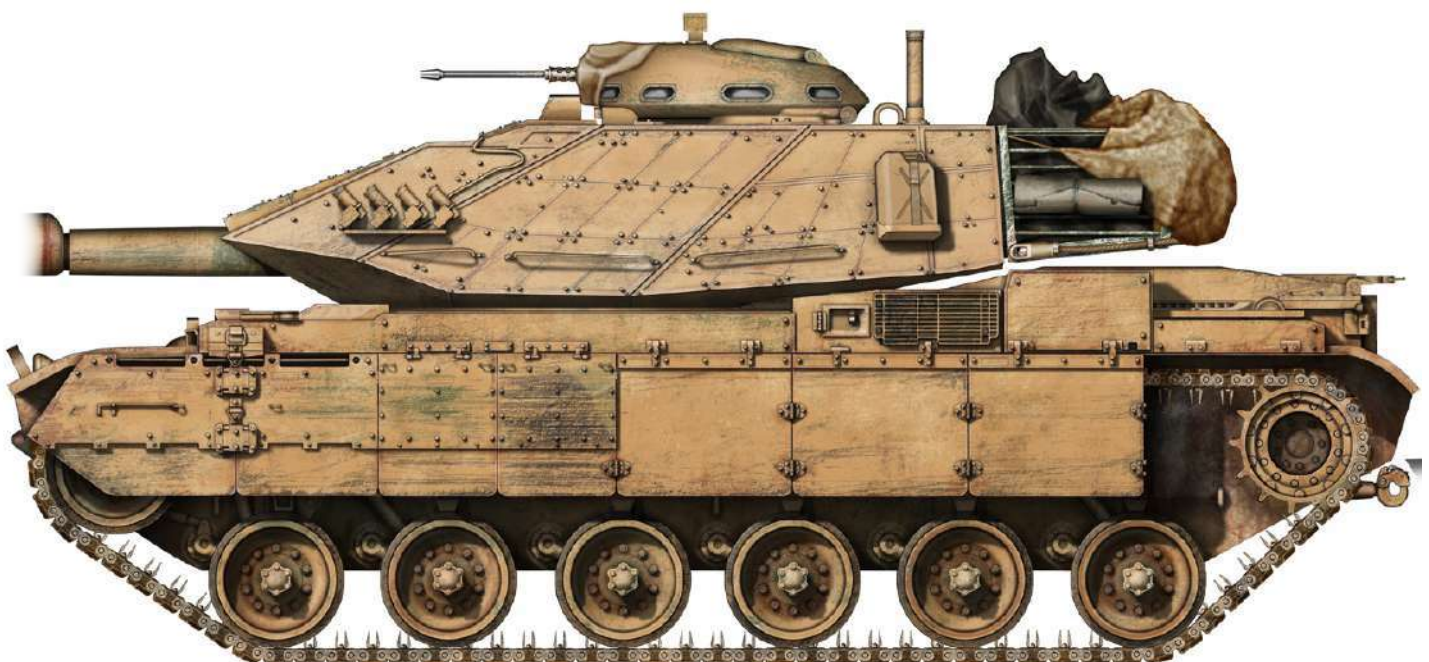
Turkish Army M60A3 with M9 Bulldozer kit

This Turkish Army M60A3 is seen operating with updated M113s. Turkish M60s have been modified in various ways over the years. A standard addition are the German style smoke launchers attached to the turret and occasionally spare road wheels and return roller halves are bolted on too. This particular camouflage scheme is used in the south east Anatolia region and in Syria.



A Turkish M60 T (Sabra)

In the new desert camouflage scheme for Northern Syria in offensive operations against ISIS and later the Kurdish YPG increased pressure on Turkish Armor in the form of ATGM's would see the M60 T (Sabra) further updated.





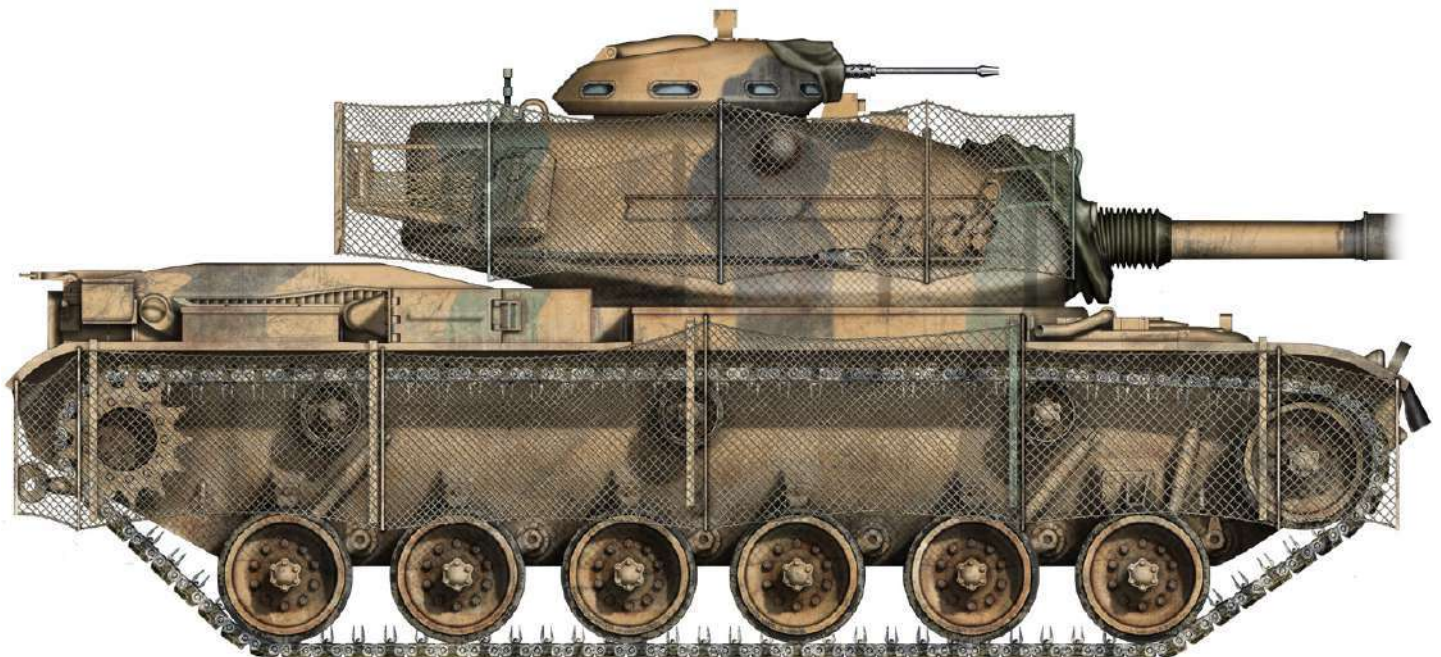
Turkish Army M60 T Sabra

This extensive modernization of the M60 series by Israeli Military Industries involves a new 120mm MG253 main gun, Knight fire control system and a more powerful MTU Friedrichshafen engine. Despite these improvements the Turkish military lost a number of these tanks to ISIS ATGMs.



Turkish Army M60A3 TTS

This Turkish Army M60A3 TTS variant has stand off mesh screens added to the turret and lower hull to fend off RPG 7 attacks from PPK insurgents. It would be of little protection against more advanced anti tank missiles.





Turkish Army Leopard 2A4

The German produced Leopard 2A4 had a rude awakening with its combat debut in Northern Syria. Several Turkish Leopard tank were destroyed with Turkish Army positions overrun by ISIS militants. The turret armour proved to extremely vulnerable to modern ATGMs, a number of tanks were destroyed in static positions where they were sitting for long periods of time and therefore easier targets.



M48T5 Tamay ARV

The Turkish military have had nearly 2500 M48s of various types from German and US stocks over the years. The M48T5 Tamay is a highly effective use of the older M48 hulls, Turkey produced 105 such ARVs with American design assistance, though the ARV looks highly influenced by Berg panzer series of Leopard based ARVs also used by Turkey.





Turkish Army M48A5T1

This M48 conducting operations in some Turkish town is an interesting mix of details, it has a set of aluminium M60 road wheels, Turkish made T517 Patton tank tracks attached to the turret but no German smoke launchers and an early style Urdan cupola with empty .50 cal. machine mount.



Turkish Army Leopard 2A4

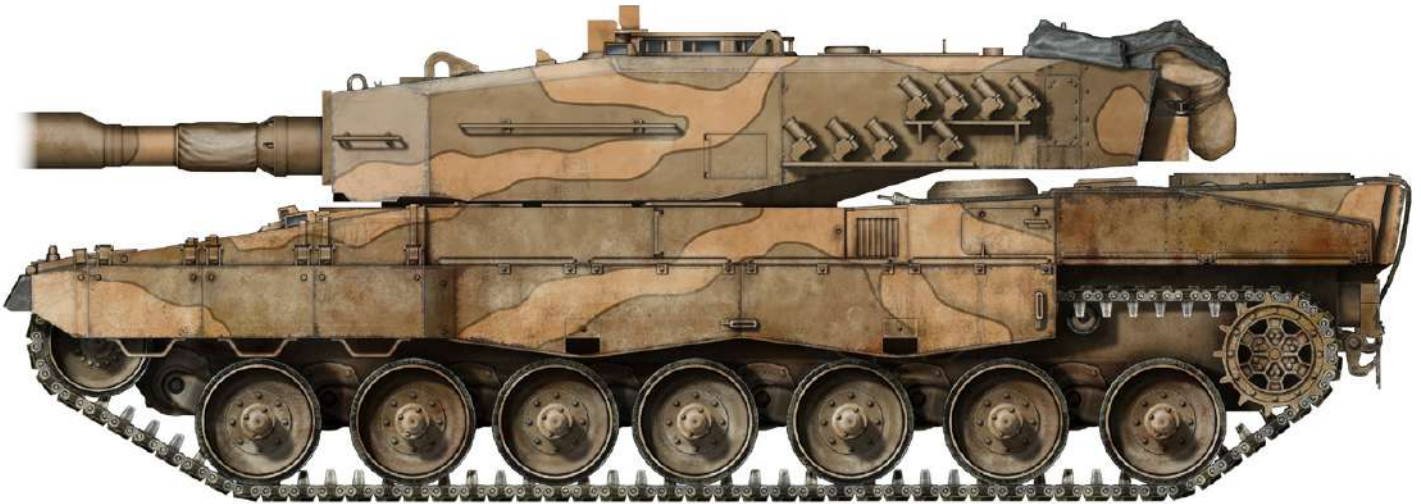
After a number of Turkish Leopard 2A4s were knocked out by ISIS ATGMs most Turkish Leopards in Northern Syria appeared with these large green mesh unit on the right hand side of their turrets. It is thought to be added armour of some sort rather than simple stowage.





A Turkish army Leopard 2A4 TR

A number of which were deployed to the Al- Bab area during Operation Euphrates shield. This action saw a number of the Leopard 2s being destroyed by Isis IEDs and ATGMs.



Turkish Army M60A3

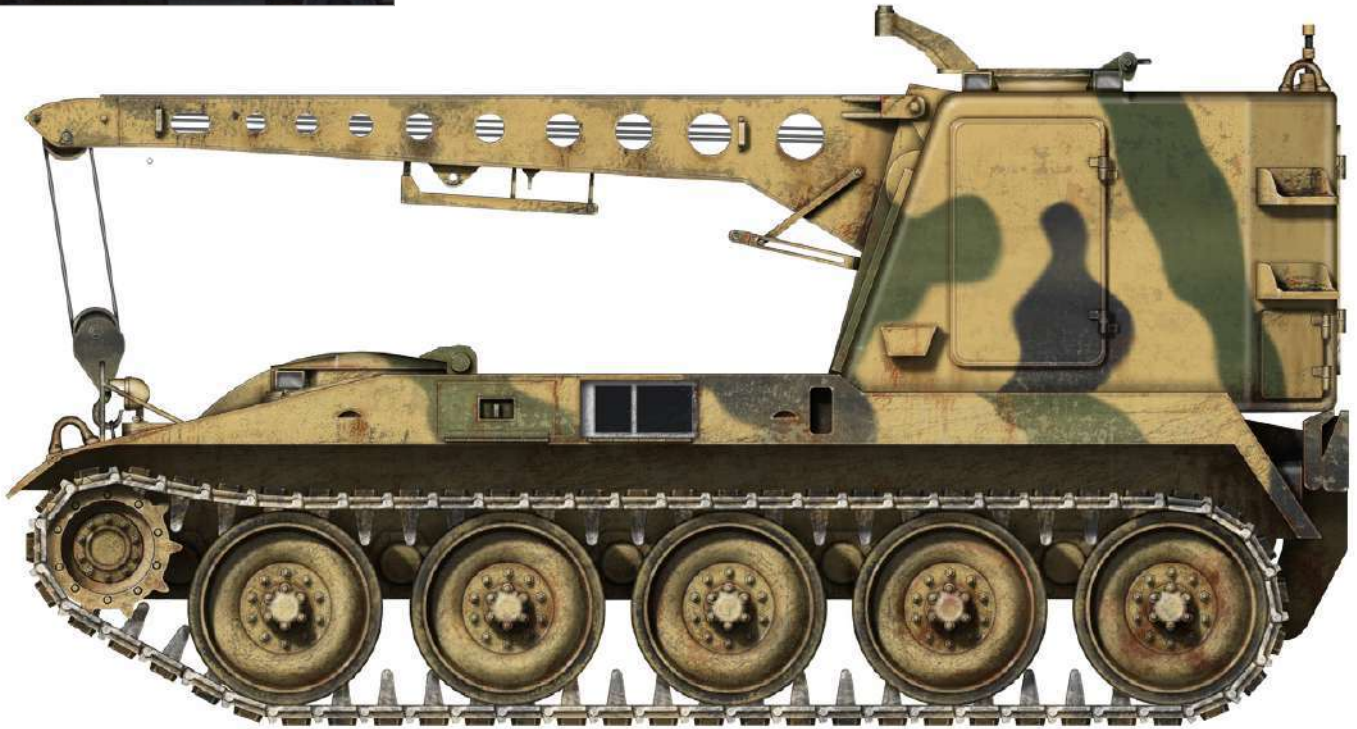
Besides standoff mesh armour (illustration page 94) Turkish M60 crews have added sand bag armour around the turret. This particular vehicle also has twin .50 cal. machine guns fitted above the main 105mm gun .These weapons were fitted on many M60s when fighting PPK insurgents in Kurdish areas.





Turkish Army M578 light recovery vehicle

These cold war era recovery and lifting vehicles are a handy maintenance support vehicle to have on operations. M578s can regularly be spotted in armour convoys of M60 A3s and Leopard 2A4s tanks, along with former German M88s and locally produced Tamay ARVs.



A Turkish army M-113A2 T2,

This variant has fold down stowage racks mounted on each side of the vehicle and an ACAV gun turret.





A Turkish army M60 T or “Sabra” tank called Fury, this Israeli updated M60 features additional laminate steel and reactive armor sections built on around the lower hull and turret and mounts a 120mm MG 253 main gun, first spotted in action during the Coup in Istanbul in 2016, the M60 T went into action against Isis in Bashiqa in 2016, one of them been taking a hit by ISIS 9k129 Kornet and the vehicle’s crew survived



Turkish Army Otokar Cobra IMV

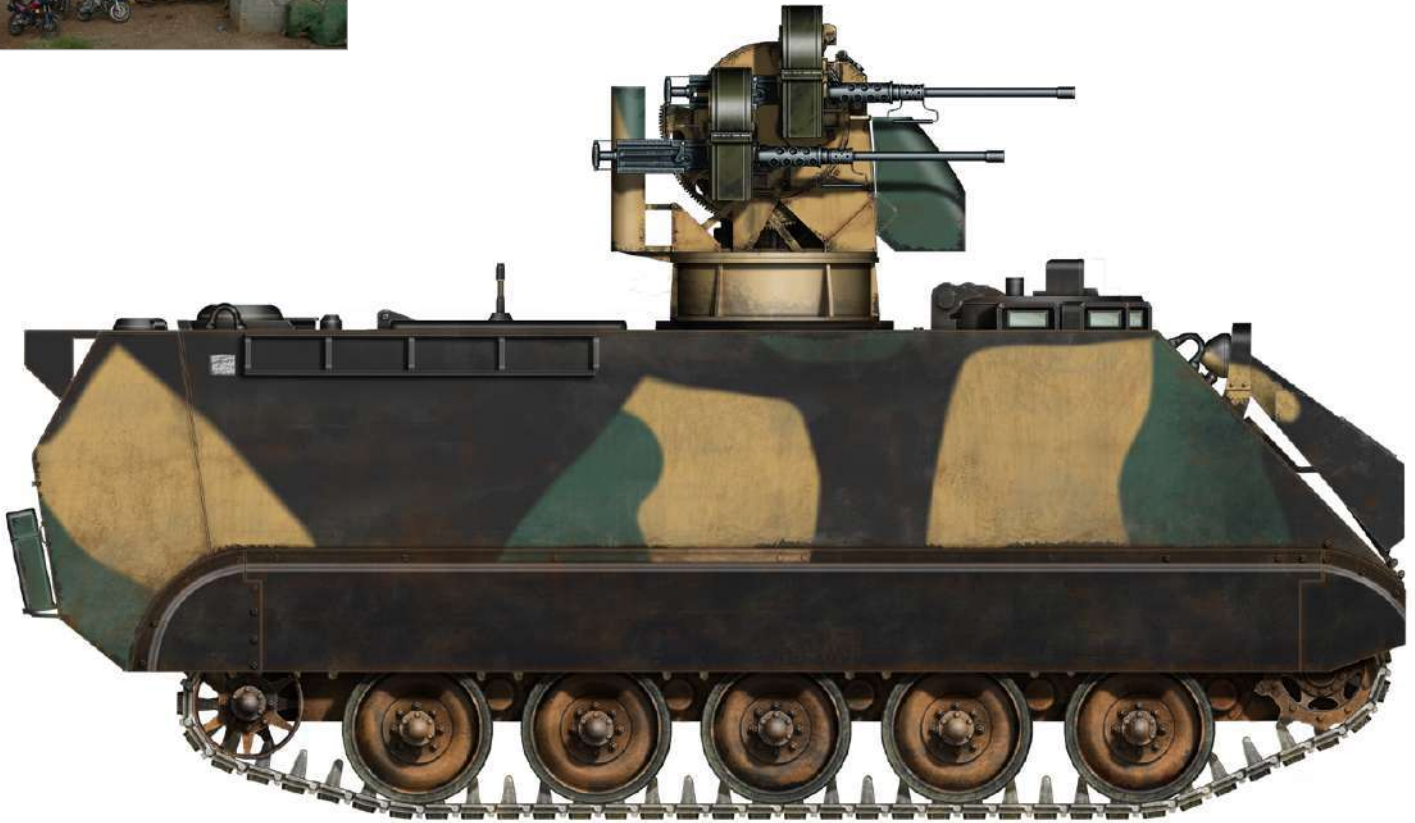
The Otokar Cobra infantry mobility vehicle was developed using key chassis components from the US HMMWV series. These vehicles have proved highly resistant to early IED and mine attacks by the PKK but later losses against ISIS prompted the Turkish military to develop a series of new MRAPS. Cobras were deployed by Turkey’s FSA allies in operations against the YPG in operation Euphrates Shield and Olive branch.





Turkish Army M113A2T1 with M55 .50 cal machine guns

This tried and trusted anti aircraft gun system dating back to World War two is still in use with the Turkish Army. The M113 based M55 was used in the fire support role against PKK insurgents attacking Turkish Army bases similar to the way in which US forces used their M55s in Vietnam.



A former East German BTR-60PB

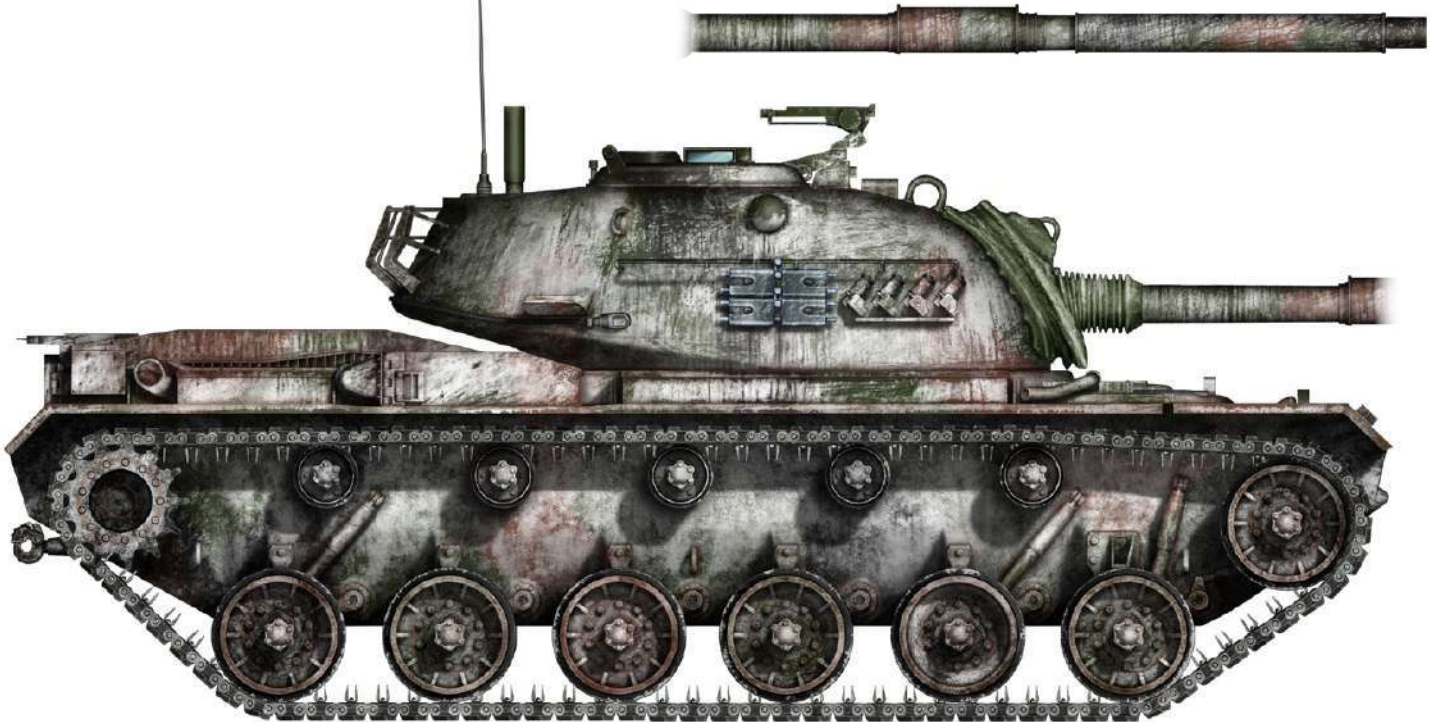
Supplied by unified Germany to Turkish forces the use of which against the Kurds caused a temporary German embargo between 1992 and 1994.





Turkish Army M48A5T2

This M48 A5 has been updated to M60A3 standard with thermal imaging and M60A3 fire control system and Laser range finder. Of note are the aluminium ribbed style M60 wheels.



Turkish Army M48T5 Tamay ARV

This Tamay ARV wears standard NATO camouflage. Some Tamays in such camouflage were deployed with Leopard 2A4s by train up to the Syrian border before being repainted in desert camouflage. This Tamay is seen towing a ACV-300 IFV.



3. ARAB REBEL ARMIES

3.1

PESHMERGA FORCES, THOSE WHO FACE DEATH

The Peshmerga Kurdish fighters of Northern Iraq have a long tradition of independence and rebellion dating back to the Ottoman and British empires. In more modern times the Iraqi Kurds and the Peshmerga fighters found themselves pawns in the Shah of Iran and Saddam's proxy conflict during the 1970s. During the Iran-Iraq war the Kurds received support and equipment from the new regime in Tehran, fighting Iraqi forces in the mountains of the North. Saddam's reaction to this betrayal was to launch the Anfal campaign in 1986, this saw the wide spread use of chemical weapons against Kurdish towns and villages. In all up to 182,000 Kurds were killed while over 4,000 villages were destroyed. The most infamous attack was that on the town of Halabja in 1988 where up 5,000 civilians were gassed on the orders of Ali Hassan al-Majid or Chemical Ali.

Having been viciously punished by Saddam's forces during the Anfal campaign, the Peshmerga along with the Shia of Southern Iraq rose up again at the end of the 1991 Gulf War, thinking the western powers would support them. Republican Guard units and helicopters of the Iraqi air force attacked and retook towns like Kirkuk causing an exodus of terrified Kurds into Turkey and Iran, fearful of massacres and renewed chemical weapon attacks. To make matters worse there followed a civil war between Kurdish forces with Massoud Barzani's Kurdish Democratic Party fighting and Jalal Talabani's Patriotic

Union of Kurdistan between 1994 and 1997. This internal fighting was put aside when the US decided to invade Iraq and remove Saddam in 2003 after the 9/11 attacks PUK Peshmerga forces played a major role in the new conflict not only with fighting in the North of Iraq but also in the intelligence gathering that led to the capture of Saddam Hussein. The new reality of post Saddam Iraq saw the Iraqi Kurds getting a Kurdistan Regional Government allowing them a large degree of autonomy from Baghdad. With the explosion of ISIL in 2014 the Peshmerga were soon in action defending the Iraqi Kurds from the Islamic state. At first Peshmerga forces had to rely on old Saddam era T-55s, T-62s, ZSU-57mm, MT-LBs, these outdated and worn out old vehicles were quickly joined by indigenous home made APCs, US MRAPs, Humvees and even a number of German Dingos along with batches of ATGMs. Having successfully fought off ISIL and captured Kirkuk the Kurdish President Masoud Barzani decided to hold a referendum on independence in 2017. This action caused a split with Baghdad, a cut off from the regional government funds and the attack and retaking of Kirkuk by Iraqi and PMF forces in October of that year. As in the past the Iraqi Kurdish leadership may have misjudged their timing but there can be no doubting that the Peshmerga are in a stronger position than ever before and are seen by many in the Western coalition as a strong and reliable ally.



3. ARAB REBEL ARMIES

3.2

KURDISH YPG, PEOPLE'S PROTECTION UNITS

The YPG was formed in 2004 as the armed wing of the Democratic Union Party, a Kurdish left wing organization. It's female wing is the YPJ or Woman's Protection Unit. Initially it was simply designed to protect Kurds against Arabs in Kurdish areas of Northern Syria, but it rapidly expanded with the out break of the Syrian Civil War. In 2012 as Syrian forces abandoned the city of Kobani, YPG units took control of it and other towns in the region. By late 2012 the YPG was under attack by a number of Syrian Jihadist rebel groups including Al-Nusra front, Ghuraba Al-Sham amongst others. These attacks were a rallying call for Syrian Kurds, strengthening the YPG's appeal. In 2014 the YPG collaborated with the Free Syrian Army to try and resist ISIL in Raqqa province. ISIL proved extremely strong at the time besieging Kobani on the Turkish border. Despite predictions of an ISIL victory and no Turkish help whatsoever, the YPG with American air power managed to save Kobani. The YPG was to prove a major ally to the West and the US in particular in the fight against ISIS /ISIL, despite this the YPG was not and has not been a major recipient of major military aid and has had to depend on captured Syrian army vehicles and ISIL equipment in various states of disarray to build a hedge collection of mainly hybrid APCs and uparmoured MBTs.

The YPG's success in action unnerved president Erdogan of Turkey and many in the Turkish military establishment, leading them to attack the YPG whom they accuse of supporting the outlawed kurdish PPK in Turkey. Operation Euphrates Shield saw Turkey take Manjib from the YPG in 2016 and Operation Olive branch was launched to capture Afrin and the surrounding area from the YPG in 2018. The YPG are by far the most democratic and western in outlook of any units fighting in the region as such they have attracted foreign volunteers from all over the world in a manner that similar to Republican volunteers during the Spanish Civil war. It is probably this appeal and the recent referendum for independence by Iraqi kurds that stirs up fears in various reactionary regimes with Kurdish populations in the region.



3. ARAB REBEL ARMIES

3.3

DAESH (ISIS)

Islamic State of Iraq and the Levant

ISIL is a fanatical offshoot of Al Qaeda and Sunni fighters who took part in the insurgency against US and coalition forces following invasion and occupation of Iraq in 2003. Initially it was led by Jordanian Abu Musab Al-Zarqawi who had learnt his field craft fighting the Soviets in Afghanistan. Zarqawi's group of Sunni group al-Tawhid wal-Jihad took part in numerous suicide bombings and hostage executions, with a particular focus on targeting Shias and their religious shrines. This policy was designed to spark off a religious civil war between Iraq's majority Shia and minority Sunni population. Killed in a US airstrike in 2006, Zarqawi's group was largely defeated by the US backed Sunni awakening, where various Sunni tribes and groups such as the Sons of Iraq fought against the insurgents. In 2011 US forces withdrew from a now seemly stable Iraq. On the domestic front Shia Prime Minister Nouri al-Maliki fueled Sunni resentment as this once powerful religious group under Saddam Hussein became more and more marginalized in the new democratic Iraq. Malaki's resistance to share power and his crack down on protesting Sunnis only added to the growing sectarian tensions creating fertile ground for the remnants of Zarqawi's group now known as the Islamic state in Iraq. Under the new leadership of Abu Bakr al-Baghdadi, fighters were sent to neighboring Syria to fight in the expanding civil war in 2012, while at home they attacked Iraqi prisons freeing Jihadists and continued sectarian attacks and bombings. After building up his forces in Syria and Iraq al-Baghdadi's group launched an all out offensive.

In 2014 taking Anbar province and the city of Mosul overwhelming a much larger group of demoralised government troops over 3000 of whom were butchered. ISIS's growing success in Syria and Iraq changed it to ISIL or Islamic state of Iraq and the Levant and with it came the realization of a new Caliphate. The new Caliphate or religious state attracted fighters from all over the Middle East as well as Europe and the Caucasus. ISIL forces captured vast amounts of modern equipment in military bases through out Syria and Iraq and with the help of former Ba'athist logistic officers from Saddam's army and were remarkable adept at moving munitions and equipment throughout their expanding Caliphate as their war on conquest expanded up into Kurdistan. On video footage released through social media and the internet ISIL showed its forces in large amounts of captured Humvees, T-55s, BMP-1s as well as many types of Mad Max vehicles as they rampaged through towns and hinterland of the region. It was at this point ISIS over extended itself attacking the Kurds and ethnic minority Yazidis. The use of horrific violence, beheading, grotesque human rights violations and the ISIL inspired attacks in the West galvanised US and it's allies to launch air strikes in Iraq in support of Kurdish and Iraqi ground forces, while Russian aircraft bombed ISIL and rebel territory in Syria. ISIL's Caliphate which seemed unstoppable in 2014 was nearly entirely destroyed by 2018, but this group has given birth to off shoots across the globe with ISIS/ISIL affiliates fighting in Libya, Egypt, Philippines and Afghanistan. It remains to be seen what form ISIS or Daesh takes in the future, now that it's Caliphate has been consigned to the dustbin of history.



4. MIDDLE EAST WAR MACHINES

4.1

T-72 MIDDLE EAST STREET FIGHTER

Although designed as a main battle tank to fight its way through NATO formations in the 1980s the T-72 has found its through role in urban combat in the shattered back streets of Libya, Iraq and Syria as recently as 2018. First seen in Moscow during a Red army parade in 1977 the T-72 Ural encompassed much of its predecessors design and layout. An off shoot of the advanced T-64 tank programme, the T-72 was a simpler less expensive version of this complex vehicle reserved solely for Soviet forces. Both the T-64 and T-72 shared the same type of layout with a 125mm main gun and auto loader the centre piece of this new MBT. The T-72 had a crew of three with the driver in the center rather than the left as found on the T-55 and T-62. On the right side of the hull are placed diesel fuel cells, while crew tool and stowage lockers are mounted along the left. The tank is low slung with the T-72 using large chunky road wheels in comparison with the narrow steel wheel affairs of the T-64. While the T-72 was rumoured to have been involved in the fighting between the IDF and Syrian forces in Lebanon in 1982 there is no proof of this occurring what is not in doubt is that it's first combat debut took place with Iraqi forces during the Iran-Iraq war. Both Iraqi and Iran made use of the Ural, M and M1 models during their eight year conflict. It was during the Gulf war of 1991 that the T-72 was to show just how vulnerable it was to modern western air and ground power assets in the form of the M1 Abrams, Apache attack helicopters and A10 Warthogs in actions that would litter the deserts of Northern Kuwait and Southern Iraq with burnt out droves of T-72s amongst others tanks and APCs.

The T-72's armour could easily be penetrated by the latest ATGMs as well as 120mm tank rounds. Another issue was the famed auto loader which when working correctly took eight seconds to load

but, in the process of loading, raised the barrel into the air(giving away its position) and was far too long compared to well-trained loaders of the coalition forces. When fired the T-72 sighting system was nowhere as accurate as the M1A1 and lacked thermal sights for fighting in the dark or smoke filled environment, these issues as well as fact that the T-72 could not fire on the move meant Saddam's Lion of Babylon soon became an endangered species. In the more recent Syrian civil war Assad's T-72's have faced well-armed rebel groups including ISIS forces armed with a wide range of the latest western and Eastern designed ATGMs as well as mines and IEDs.

The Syrian as already mentioned had updated some of their T-72 fleet with the TURMS-T fire control and sighting system, now they mounted Sarab anti-missile guidance boxes above their T-72 turrets much in same manner as the Iraqis had on some of their T-72s in 1991. Despite its numerous short comings the T-72 and later models such as much more advanced T-72B3 can be found in service around the globe today, with large numbers of T-72s produced by Russia, Poland and Czechoslovakia, these tanks can be obtained cheaply, with no strings attached and at a reasonable price be updated depending on a customer's requirements.

As a street fighter tank on rubble strewn streets of the middle east the T-72 will no doubt place on with various armies and militias it's robust reliability appreciated by its crews whether it be donned in ERA tiles, slat armour or sand bags and concrete.



A detailed shot of the Turms-T system mounted in place of the original gunner's TPN-1-49-23 night sight unit. The commander's hatch is also updated with a new mount for the NSVT 12.7mm gun with a new panoramic sight. Of note is the System 802A 81mm smoke launchers mounted on the front of the T-72 M1 turret.



This T-72M1 with its extra laminate armour on the front glacis plate is no doubt one of a batch supplied by Czechoslovakia state factories and updated to Turms-T standard by Italian company Galileo Avionica. Records indicate a mixed group of 122 T-72 Ural variants, T-72M1s and T-72AVs were updated in Syria between 2005 and 2006. These important T-72 updates are retained mainly by trusted Republican Guard units and the 4th armoured Division. Of note are the 125mm tank rounds protruding from the rear stowage bin.



This standard model T-72 M1 retains its original sighting units, but has had a Syrian manufactured Sarab 1 or Mirage anti-missile box added, it's powerful lights interfere with the guidance systems of early guided ATGMs such as the American TOW. This unit is missing its top circular lid.



This well-worn and battered T-72 M1 has a cover over its Sarab anti-missile box. In the urban fighting and badly damaged city areas these units, mud guards and L-2AGM Luna infrared search lights are easily damaged as seen here.



A Syrian T-72AV reversed back into a destroyed building of note on this variant is the mix of ERA or Explosive Reactive Armour tiles, and good old fashioned eastern front passive armour in the form of spare RMSH tracks hanging from the front of the vehicle. Of note is the Sarab 1 box in conjunction with the Viper sight system, another new Syrian update housed in the original gunner's TPN -1-49-23 night sight housing.



An interesting sub variant, in the Syrian T-72 versions, is this T-72M1 with ERA tiles randomly added by the crew in a fairly haphazard fashion. Of particular interest is the later Sarab 2 anti-missile box with its curved front and the Viper sight in the gunner's unit.



A detailed front three quarter view of a Polish T-72 Ural variant, of note are the flip out Gill armour side sections still in use in Syria.



Detail shot of the L-2AGM Luna active infrared searchlight and right side port mounted TPD2-49 coincidence rangefinder, with hand railing instead of smoke launchers units.



Detail shot of the left hand side battery of 81mm 802A empty smoke mortars bar one missing unit and its wiring.

Detail shot of the third rear stowage bin, mounted on the left hand side of a T-72M.



The T-72 exhaust outlet is mounted in the same position as the preceding T-55 and T-62. As with earlier models fuel can be poured or dripped on to the exhaust manifold to create extra smoke to shroud the vehicle in white plumes.



A detail shot of the stripped down gunner's TPN-1-49-23 night sight unit, its outer housing removed.





A front three quarter view of a T-72 M, this ex-Iraqi example is has a T-55 mudguard fitted as a replacement for the standard unit, not entirely uncommon in the middle east.



Top shot of V-46-6 12 cylinder engine, this engine design can trace its roots right back to the T-62,T-55 and T-34 to the very original Italian aircraft engine which was hauled off a run way after the Russian Civil War by Bolshevik engineers and used as a basis for their highly successful Diesel engine.



This T-55 fuel cell has been mounted in the rear right hand side section by Iraqi crew men many years before hand as a replacement for the original T-72 unit, again not uncommon in battle field situations.

Top shot of the T-72 Air filter unit mounted to the side of the V-46-6 12 cylinder multi fuel engine.



Top shot of the armoured cover for the radiator unit and to rear of that the Air intakes for the engine fan.



Rear left hand side tool stowage box unit.





Overview of the narrow engine oil container, mounted above the exhaust outlet on the rear left hand side of



To the rear of the T-72M and M1 models are two hinged stowage boxes, these are used to hold extra ammunition, of note is the empty NSVT mount for 12.7mm AA machine gun.



Overview of this former Iraqi T-72M1 turret showing the gunner's TPD-K1 laser sight (to the front) and TPN-1-49-23 night sight to the rear complete with gunner's infrared searchlight.



A good example of a six spoked road wheel now standard on later T-72 and T-90 variants, replacing the earlier eight spoked version.

4.2

T-62 SMOOTH BORE SNIPER

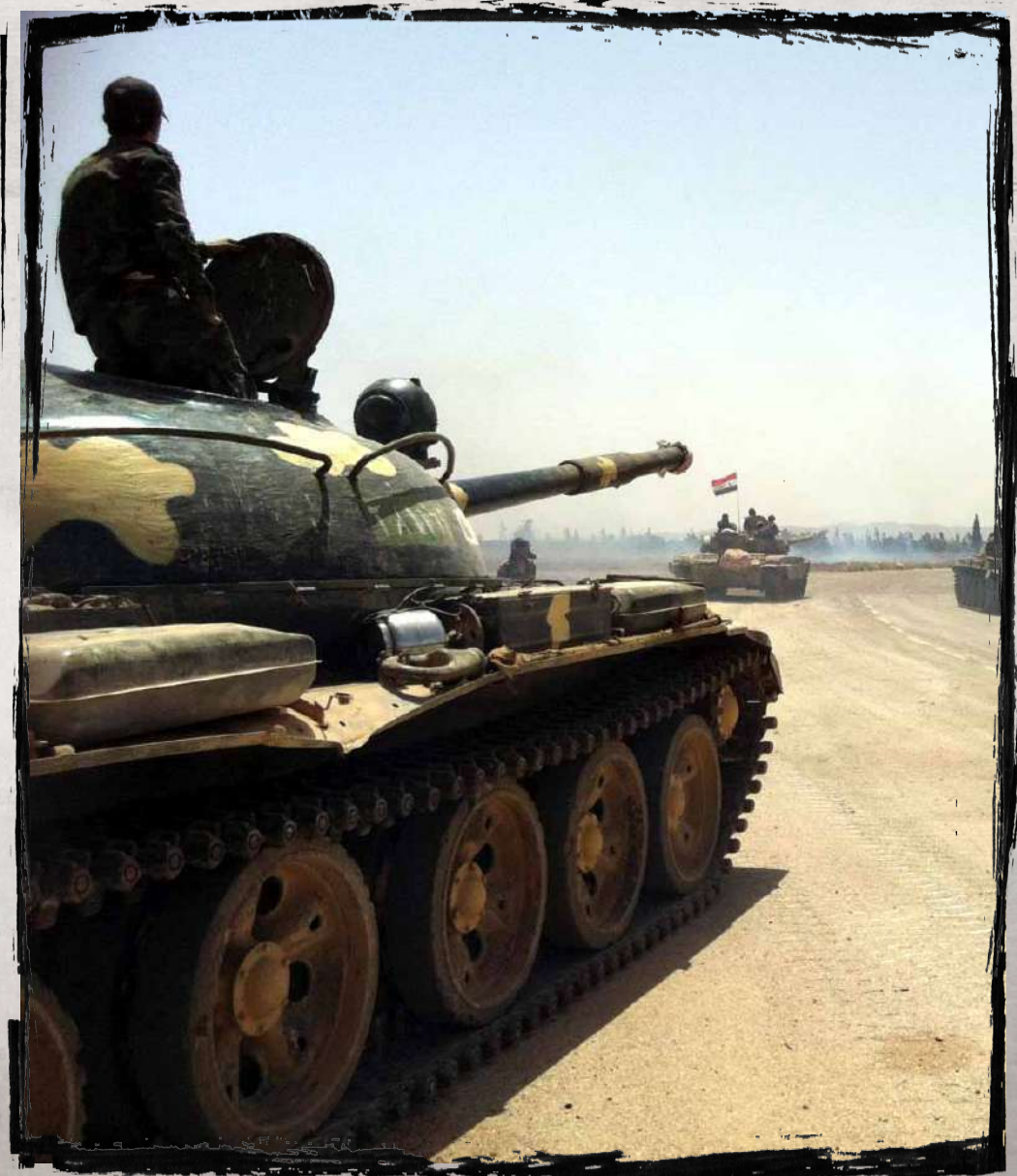
The T-62 tank was designed and built around the 115mm U-5TS 2A20 smoothbore gun as a result of the realization in the 1950s that the rifled 100mm D-10T of the T-55 could not penetrate the frontal armour of modern western tank designs such as the Centurion and M48 Patton. As the T-55 was otherwise fine the T-62 used many components and the layout of the earlier T-55 but differed in having the larger caliber 115mm smoothbore main gun and the ability to fire Armour-piercing fin-stabilized discarding sabot or APFSDS ammunition. The T-62 carries 40 rounds as compared with 60 rounds in the M60. The T-62 carries a mix of Ammunition types including high explosive, high explosive anti-tank and the mentioned APFSDS. During the 1973 conflict the speed of this high velocity round, over 1 mile a second allowing the fin stabiliser the ability to penetrate any Israeli MBT it hit. On the down side the main gun has a slow rate of fire approximately 1 shot every 15 seconds, due to the gun automatically rising after firing for reloading and the automatic ejection system takes six seconds to jettison the spent shell casings through the rear

turret port, much slower than the M60 at the time. The crew work load is extensive in terms of driving or retrieving ammunition and loading. Over ranges of further than 2000 metres the T-62 sighting systems are unreliable. It is for this reason perhaps that the Syrian have updated their T-62s with side turret mounted wind sensor units. The T-62 remains a popular tank throughout the middle east serving in Algerian, Libyan, Polisario forces, Egypt, Syria.

Iraqis T-62 are longer in service though a few are in Kurdish hands and the Iranian army purchased 200 North Korean Chonma-ho T-62 copies in 1984 but quickly passed them on to the Revolutionary Guard. Syria makes use of a number of Types of Soviet/Russian T-62 variants including model 62, 72 and earlier variants which have had machine gun cupolas added. More recently Russia supplied T-62M variants to Syria complete with BDD turret armor, bow armor, Gamma radiation cladding and KTD-2 laser range finders these vehicles last seeing action in the hills of Afghanistan.



A Syrian T-62 Model 1972 with a particular gaudy mustard yellow and green camouflage, the yellow is faded on patches revealing a paler colour below.



A Syrian Army T-62 Model 1962 turret on improved model 67 chassis this combination of early turret later improved chassis were numerous in the Syrian army from 1973 to present, this variant also has updated T-72 style tracks.

A Syrian Army T-62 Model 1972 complete with DShK 12.7mm AA machine gun for overhead defence and more recently in the civil war dealing with rebel anti-tank teams.



A Syrian Arab Army T-62 Model 1967 with early Smooth model 62 turret featuring an indigenous wind sensor unit, an attempt to improve the accuracy of the main gun over 900 metres.





Syrian Arab Army T-62 Model 1972 with RMSH (T-72 style) tracks, this vehicle displays one of the more common ways in which Syrian crews tried to add extra protection to their tanks with the addition of sand bags.



A detailed shot of a captured Syrian army T-62, with Model 1972 turret featuring an empty DShK 12.7mm AA mount but with earlier model 1962 engine as indicated by raised rear hatch, the Syrian produced wind sensor unit is shown to good effect in raised position.



A heavily sand bagged Syrian model 1972 with a somewhat serious looking crew the sand and green camouflage shown to good effect.

In 2017 the Syrian armed forces received a large shipment of T-62 M and M1 variants from Russia, these ultimate model T-62s have extra turret and bow armour along with KDT-2 laser range finders while the M1 has Gamma radiation cladding attached to the turret roof. These tanks were originally deployed to East Germany towards the end of the Cold war only to end up fighting in Afghanistan, be put in storage and finally be sent to Syria.



A Syrian T-62 model 1972 in a Dark green camouflage with pale stripes, rust and dirt. This shot provides a good depiction of a typical Syrian tank crew in field conditions.



A dug in T-62, again a mixture of late turret and early hull, complete with crew bedding attached to the rear of the turret.





Overhead view of rear engine deck on the T-62 this engine deck is the improved Model 1967 variant also used on the Model 1972.



Overhead shot of the rear two diesel fuel cells on the T-62. These examples are missing their metal tubing fuel lines and filler caps.



The rear of the T-62 turret feature a turret ventilator unit beside which is positioned an oval shaped spent shell ejection port. The large 115mm shell cases needing to be removed quickly after firing.



An overview of a T-62 Model 1962 turret, this version lacks the DSIK 12.7mm AA machine gun mount of later variants.

The commander's hatch on this T-62 has been reversed to the rear it is standard on T-62 and T-55 models.

Overhead view of T-62 side tool locker and front right diesel fuel cell.





A detailed shot of the rear engine plate of the T-62 housing the cooling fan and transmission unit. Of note is the empty rear fuel tank attachment plate four of which are welded to the rear.



Detailed shot of the two rear diesel fuel cells on the back running board of the T-62, showing the correct position of the grab handles and side holding clips.



A fine study of a delegated T-62 engine bay empty and covered with tarpaulin. The extreme paint chipping, mud and grime make for an atmospheric image.

4.3

T-55 A SOVIET ICON

The Soviet T-54/T-55 series and its Chinese copy the T-59 along with ARVs and engineering variants are by and far the most widely produced and serving tanks ever. The T-54/ T-55 has seen action throughout Eastern Europe, Africa, Asia and the Middle East. Developed as a successor for the War winning T-34/85, it evolved through the 85mm gun armed T-44 to the D-10T 100mm armed T-54. Early models had narrow tracks and a flatted turret, this was altered to the T-54 model 1951 with what we consider the classical T-54/T-55 style turret we know today. The T-55 layout is straight forward and simple with diesel fuel cells mounted on the right hand side running boards and crew Zip boxes, barrel cleaning rods and engine oil container mounted on the left. The engine of the T-54/ T-55 series consists of a V12 diesel engine found in the earlier T-34 series, it is amazing to think that this engine was originally designed by Bolshevik engineers who came across a damaged Italian aircraft engine after the Russian Civil War and used as a basis for their tank power plant for decades to come. The D-10T 100mm main gun was first used in the highly successful SU-100 tank destroyer in World War two. The combination of both engine and armament with the well armoured hull and turret ticked all the boxes for a vehicle that's robust simplicity would be ideal for evolving nations throughout the globe.

The T-54 model 1951 first saw action in Hungary with Soviet forces during their quelling of the uprising in 1956, but it wasn't long before the T-54 saw action in the middle east with large numbers captured from the Egyptian and Syrian armies by the Israelis in 1967. By 1973 the T-55 had joined the fray, with the IDF able to field units of capture T-67s Yom Kippur war alongside captured Czechoslovakian manufactured VT-55 ARVs and MT-55 bridge layers.

Libyan and Egyptian T-54s and T-55s saw action next in their brief border war of 1977, but it was in Lebanon that the T-55 would see major action with various militias and the Syrian army in 1982. Once again Syrian forces would find themselves fighting the IDF in T-55s and T-62s in an uphill struggle against up armoured Centurions, Pattons and the latest Merkavas. Some Syria T-55s had new laser range finders fitted, two types were seen a Syrian variant and a North Korean import. These updates made little difference to the outcome and at this point the T-55 was obsolete on a modern battle field. By this time the Iran-Iraq war was in full swing having started with an Iraqi invasion of Iranian territory in 1980. Iran and Iraq fielded armoured divisions of T-55 and Chinese copies in the form of T-69, throughout the 8 year conflict these tanks were not only destroyed in their droves but many changed hands and were used against their former owners. It was in the Gulf war in 1991 that Iraq would lose thousands of T-55s, T-62s and T-72s to the US coalition in the deserts of Kuwait and Southern Iraq.

Though obsolete by modern standards the T-55 still combat on in the Syrian Civil war with rebels and army forces alike. Syrian army units field a range of Russian, Czechoslovakian and Polish built T-55 variants the most recent addition from a number of years back being the T-55 AMV with reactive armour and laser range finder. In Iraq small numbers of old Saddam era Type 69 tanks operate with the Popular Mobilization Forces and Iraqi army units many with ACAV style gun turrets. ISIS units operated a large number of captured T-55s up armoured with steel plate and concrete and a number were converted into kamikaze bomb tanks for storming operations, before the group's demise. The fact that the T-55 still operates in the middle east, Africa and Asia is testimony to the design and reliability of this Soviet Icon which after 6 decades shows no sign of retiring, and will no doubt pop up in conflicts still to come.



A Syrian T-55 in Lebanon during the late 80s, dug in a base in the North of the country. Of note is the North Korean Laser range finder, barrel cover and red brown coloured mudguards. In the early years many of the T-55 with North Korean LRFs mounted KPV.14.5MM AA guns instead of the DShK 12.7 mm AA gun reverted to lat



A late model T-55AMV in Syrian service during the civil war, the ERA reactive armour blocks are still in neat rows on this vehicle, indicating that it's only recently gone into service. Of note is the Russian KDT-2 LRF fitted to the AMV variant.



A Syrian Arab Army T-55AM variant, this version has rubber side skirts, a KTD-2 laser range finder, smoke grenade launchers and enhanced engine but doesn't mount any ERA as on the AMV variant. To add extra protection the crew have resorted to the old sand bag routine.

A T-55A with Syrian manufactured Laser Range Finder, these units were first encountered in the battle of Lebanon in 1982 but without the wind sensor units mounted on the rear of the turret later on. At least one of these vehicles with this LRF was used by Lebanese Forces a right Christian militia after being captured from the Syrian army.



A sand bagged Syrian army T-55AM towing an ERA covered T-55AMV variant.



This Syrian army T-55 with North Korean Laser range finder has been recaptured from ISIS and is waiting to be reissued to an Army tank crew.





A detailed rear hull shot of a Syrian T-55 showing the various Zip box arrangements typical of Syrian army T-55s.



A Syrian rebel standing on a rather battered T-55A with remnants of previous government markings, rigged fuel cells and buckled mud guards.



A former Iraqi type 69 tank, Iraqi forces under Saddam Hussien purchased 2,500 of these Chinese T-55 copies. Today small numbers survive in service mainly with Popular Mobilization Units and a few in the hands of the Peshmerga.

Detail shot of the horse shoe armour mounted on right hand side of the T-55AM2 Czechoslovakian variant, empty DShK 12.7mm mount, this variant has seen extensive action in Yemen and further fielded in Sri Lanka.



To the rear of the T-55AM2 turret is positioned a battery of eight smoke grenade launchers. Of note is the wiring and the turret armour bolt fitting to the front of the vehicle.



To the rear of the T-55AM2 turret is positioned a wind sensor. Of note is that it's retractable while not in use.





A front three quarter view of a T-55AM2, showing to good effect the turret armour, front bow armour and Czechoslovakian laser range finder.



Side profile of a VT-55A this version of the Czechoslovakian ARV is the standard variant of this versatile vehicle, it retains the NBC cladding on the driver's and commander's hatches making it recognisable from the VT-55KS variant. The VT-55A was delivered to Yemen along with T-54/55AM1 and AM2 tanks.



To the rear right hand side of the VT-55A is mounted a 15 ton. capacity crane, tow fittings and the snorkel tube for fording rivers.

Detail shot of the rear crane attachment, tow bars and crane hook. Of note is the late style T-72 style tracks used on the VT-55A.



Detail shot of the front Zip box and commander's cupola on the VT-55A.



Detail shot of the rear of the large stowage basket on the back of the VT-55A. The sides of which can fold down for ease of use with large engine parts etc.





A rear shot of the VT-55KS, 500 of these variants were produced by Czechoslovakian Martin works for "Capitalist States" KS between 1970 and 73. This ex Syrian ARV is seen in Latrun tank museum.



Detail shot of the front of the VT-55 KS, captured and modified in 1973 for IDF use. The VT-55KS is still the main ARV in Syrian Arab Army service.



A front view of the stowage box on the VT-55KS, this version of the ARV was also used in the Libyan Army, a number of which were converted into rather strange APCs.



1. A top shot of the VT-55KS stowage deck, much of the decking has been removed to expose the upper hull below which is mounted a 50 tonne winch.

2. A bird's eye view of the Duxford based VT-55A showing to good effect the rear earth anchor or spade, 15 ton crane and winch cable above the centre of the spade.

3. A late model T-55 1970 this variant T-55 is used in large numbers by the Syrian Arab Army and features a T-62 style machine gunner's hatch. A number of these variants were fitted with North Korean Laser range finders, with small numbers captured by ISIS and other rebel groups during the Civil war.

4. An MT-55A bridge layer these Czechoslovakian engineering tanks were built by ZTS Martin works with MT-55KS built for foreign customers. Seeing use in action with the Syrian Army in 1973 and more recently in the Civil war, it is in Libya that rebels converted these machines into oddly shaped IFVs with armoured boxes mounted instead of the bridge units.

5. A detail shot of the folding arm of the MT-55A, complete with hydraulic ram.



1. Another T-55 based bridge layer is the massive MTU-20, these units saw action with the Syrian Army in 1973 with a number captured by Israeli forces. This MTU-20 is preserved in Parola in Finland.

2. The full length of the MTU-20 on display, these bridge layers are no doubt useful in the Civil war where groups like ISIS have destroyed so much of the infrastructure including bridges.

3-4. A rear and front view of the ZSU-57, this twin barreled SPAAG is obsolete as an AA gun but is ideal for urban combat middle east style. The ZSU-57 is still used by the Syrian Arab and Peshmerga forces.



4.4

2S3 AKATSIYA SOVIET HEAVY HITTER

The 2S3 was produced by the USSR in response to the United States M109 SPG. The 2S3 used a 152.4mm howitzer based on the towed D20 with a standard range of 18.5 km while the early M109 had M127 155mm gun with a range of 14.6 km. All Later M109s models had the longer 39 caliber M185 with a standard range of 18km. These Cold war warriors saw action against each other during the Iran-Iraq war, Iran receiving a number of M109s during the time of the Shah, while Iraqi 2S3s were only a small part of Saddam's massive artillery arsenal. Iraqi 2S3 would also see action in Kuwait in 1991 where one point of interest was the removal on some vehicles of the commander's cupola mounted PKT 7.62mm machine gun and the replacement of it with the heavier calibre DShK 12.7mm AA gun. The 2S3 went into production in 1971 after problems with fume build up or gas contamination in the turret. The Soviets were slow to export the Akatsiya initially with other Arab customers such as Syria, Libya and Algeria only receiving the SPG in 1995 from the now Russian federation.

The 2S3 is well under ranged by modern standards with new SPGs such as the 2S19 having an effective range of 45km and much more advanced fire control and accuracy. However in conflicts like the Syrian Civil war it has been employed both at close range levelling buildings and in general shelling softening up rebel positions during various government offensives. In terms of maintenance and repair it also helps that the V59 12 cylinder diesel engine is the same type fitted to T-55s, T-62s which eases problems in relation to spare parts and repair considerably.



A Syrian Republican Guard 2S3 grinds it's way through the rubble of a Syrian town, these SPGs have been a vital part of Syrian army urban combat groups.



This 2S3 in it's realitively fresh green livery and regime flag is a new delivery from Russia.Older Syrian 2S3 are either painted Sand all over or green and sand camouflage.



A well worn and rusty ex Iraqi 2S3, a good study on how Syrian or older Iraqi SPGs would look after being on active service for a few months.



A great study of the mud encrusted road wheels and tracks of a 2S3 SPG.

Front view of the the 2S3 turret showing to good effect the 152mm barrel and recoil housing to the front of which is positioned the driver's compartment.





1. Front view of the the 2S3 turret showing to good effect the 152mm barrel and recoil housing to the front of which is positioned the driver's compartment.

2. Detail shot of the right hand side 2S3 road front right hand side road light and metal guard.

3. A view of the business end of the 2S3, showing the 152mm muzzle break and it's red primer to good effect

4. Top shot of the 2S3 commander's cupola to the side of which is mounted a small infra red lamp and a PKT 7.62mm machine gun, here the mount is empty.



4.5

ZSU-23X4 SHILKA FOUR BARRELED STREET FIGHTER

The Anna news footage opens with T-72AVs their side skirts ripped off and ERA armour in disarray, followed by turret views of a BMP-2 as it races down the ruined streets of the Syrian city of Jobar, a single ZSU-23 Shilka mounts a raised berm and proceeds to fire bursts of 23mm at buildings in the distance. Such is the new role of this low altitude anti- aircraft gun in the Syrian civil war. Flak suppression is used as part of the vital role in Syrian army mixed battle groups as grind down rebel opposition in the large towns and cities of Syria. The Shilka first developed in 1958 was put into series production in 1965 as an integral part of Soviet air defence. The ZSU-23-4 would engage aircraft and helicopters at low altitude while weapons such as the SA-6 Gainful would tackle medium altitude aircraft and SA-2 and 3s higher altitude opponents. The Shilka was to see it combat debut in 1973 on the Sinai and Golan fronts shooting down an estimated 31 Israeli fighter aircraft. Shilkas also saw action in Vietnam, Afghanistan and major use with Iraqi and Iranian forces during the Iran-Iraq war. At over fifty years of age the Shilka is still a major threat

to helicopters and low flying aircraft but has found a new role in urban combat in spraying possible ATGM launching positions before tanks and infantry are sent in to mop up resistance in not only Syria but with Kurdish forces and Iraqi police units too. Interestingly the Kurdish and Iraqi police Shilkas have replaced the original water cooled AZP-23mm guns with the air cooled variants found on the towed ZSU-23mm x2. Syrian and Hezbollah Shilka have also been seen with Sarab 1 and 2 anti missile defence boxes mounted on their turrets. Despite their thin armour which can be easily penetrated the simple rugged reliability of the Shilka ensures it will remain in use as a ground fighter in the middle east, while in counties like Poland it has been updated with new radar and missile defence systems to make it a relevant SPAAG.



A head on shot of a Syrian Arab Army Shilka, showing to good effect the driver's station not unlike that of the traditional Soviet design of the old T-34 tank driver's position.

A typical Syrian camouflaged ZSU-23-4, on the turret sits the famous Druze Major General Issam Zahreddine. Zahreddine was a key Republican Guard General and defended Deir Ezzor for over three years finally being killed towards the end of the battle for that city when his vehicle drove over a rebel mine.



A former Syrian army Shilka being removed from battle by ISIS units, large amounts of Syrian army equipment was captured by ISIS particularly from Syrian Air Force bases, much of it would see action again in Syria and Iraq many converted into bizarre mad max vehicles and in some cases suicide bomb tanks.

A detailed shot of the upper turret of a Syrian Army Shilka, its large flat hatch not designed for actual ground combat of note is the AK 47 close at hand, offering some degree of protection from sudden attack.



A youthful Syrian army Shilka crew give the two finger salute for victory. Of note is the well-worn camouflage scheme and stains on this ZSU-23-4.



Another example of extreme weathering on a Syrian Army Shilka, the pressed metal front turret section is battered and buckled from driving around the tight streets of Syrian towns and providing direct fire during urban combat.





Detail shot of the right access hatch behind which is the transformer for the Shilka's electrical supply and a OU-3GA2 infrared searchlight is stowed for the commander's cupola.



Detailed shot of the RPK-2 Gun Dish or radar unit in the folded down travel position. Syrian Shilka's have no use for this equipment in the current civil war.



The front of a rather worn out Iraqi ZSU-23-4 Shilka, the Shilka is based on an altered PT-76 hull referred to as the GM-575 its large boxy hull containing the once sophisticated electronics associated with the radar unit.

Detailed shot of the Shilka front right hand side head light arrangement, showing to good effect the small formation light, light cover above and small stowage hatch below.



The rear of the ZSU-23-4 contains the V6R 6 cylinder 4 stroke airless water cooled engine, to the right it's hatch completely rusted is the access point for the vehicle's auxiliary power unit.



A side rear shot of the Shilka turret showing the RPK-2 Gun Dish in stowed position behind which are the access hatch for the vehicle's electronics system.





Detail shot of a Shilka rear tracks, drive sprocket and road wheel typical of so many Soviet /Russian light APC, tank and tractor designs whether it be PT-76, BMP or MT-LB.



4.6

ZSU-23X2 AND ZPU-14.5 MIDDLE EAST FLAK WAGON FIRE POWER.

Of all the weapons that sum up the revolutions, border wars and guerilla groups of the middle east gun trucks or pick ups with AA guns aloft must be the universally excepted image of almost iconic status, its the combination speed and fire power that is used throughout the region when the protests stop and the dogs of war are unleashed. Over the years the twin barreled ZSU-23 mm x2 has been mounted in the backs of Iraqi MT-LBs in Saddam's army, ZPUx4, x2 or singularly as the KPV 14.5 have been lashed to the backs of Toyota pick ups, Land Cruisers, Land Rovers, Lebanese army M113s, PLO Unimogs, Chadian army Humvees the list goes on. These particular Soviet and Chicom era AA and guns owe a fair bit of their design to German 2cm Flak 30/38 guns of World War two. The Soviets were acutely aware in the years following World War Two of the technical superiority of US and Western aerial fire power in terms of fighter aircraft and helicopter gun ships. The massive use of various types of US ground attack aircraft in a major engagement in Europe, would see Soviet and Warsaw pact numerical armour advantage, decimated by US

airpower if not answered by large deployments of AA guns and SAMs. In client states throughout the middle east badly piloted MIG-21s and MIG-23s would be no opposition to the Israeli, US or Coalition aircraft. The prolific use of AA guns would at least allow citizens of Arab states think their forces were hitting back while their capitals were being blown asunder. In the end such weapons were to find their way into the hands of groups as diverse as Hezbollah to ISIS, while being used by armies such as Western backed Moroccans to the Russian backed Syrians offering that ability to reach your opponent at ranges up to 2km and 2.5kms respectively with the ZPU and ZSU with a range of different ammunition, these weapons have become as ubiquitous as the AK-47 in conflicts that demand simple reliable firepower, for which parts and ammunition is readily available from arms dumps and dealers from Eastern Europe and the far East.



A rear shot of a ZSU 23mm x 2, this double barrelled AA gun was developed in the late 1950s to deal with low flying aircraft in range of up to 2.5 km away. These powerful guns have ended up on the backs of pick-up trucks, M113s and a range of Soviet built APCs including MT-LBs and BMP-1s.



A Syrian government army or militia Gaz-66 utility truck with a ZSU 23mm x 2 AA gun in a homemade rusty armoured cab idle for the urban and medium range fire fights in Syria and Iraq.



A operator's view of the ZPU-2 this handy 14.5mm anti-aircraft gun is another example of Soviet /Russian AA gun that has found much use in urban fighting in the middle east this particular type being utilized on Lebanese M113s and Moroccan army Land Rovers, Land Cruisers and Humvees.



A detailed shot of the ZPU-4, this four barrelled version of the ZPU 14.5mm AA gun is the far more famous variant seeing action in the Iran-Iraq war, in Lebanon with all factions and throughout Asia and Africa.



A side view of the ZPUx4 showing the rear of the KPV 14.5 mm machine guns, single versions of these were mounted on Updated Syrian T-55s by North Korean technicians while adding laser range finders but were later removed by the Syrian Army. Of note is the absence of the large ammunition boxes on this example.



A rear view of the ZPU-2 showing the basic crew seating and straightforward sighting system used on this AA gun. The trolley unit is usually removed when these AA guns are mounted on pick-ups or APCs.

A clear shot of the large ammunition boxes mounted on each side of the ZPU-2, these weapons have a high rate of fire using up many 14.5mm rounds during engagements.





The business end of the ZPU-4, Soviet barrels on these guns have oval cooling openings while Chinese copies have simpler circular ones.



A good overall shot of the ZPU-2 AA gun on its simple towing trolley obviously influenced by the similar layout of German World War Two anti-aircraft gun carriages like that on the flak 30/38.

A PLO ZSU 23mm x 2, captured by Israeli forces in Lebanon in 1982 these AA guns were mounted on the backs of Unimog trucks, but represent an approach copied from Syria to Ukraine.





MIDDLE EAST WARS

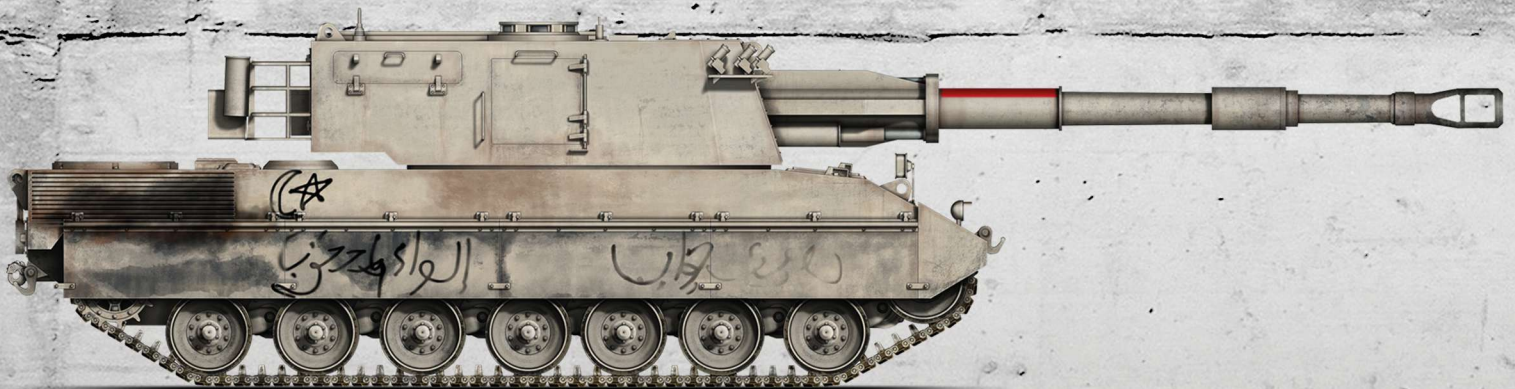
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